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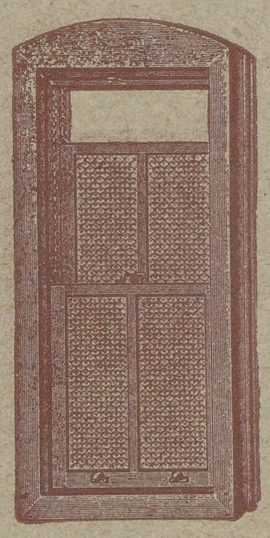

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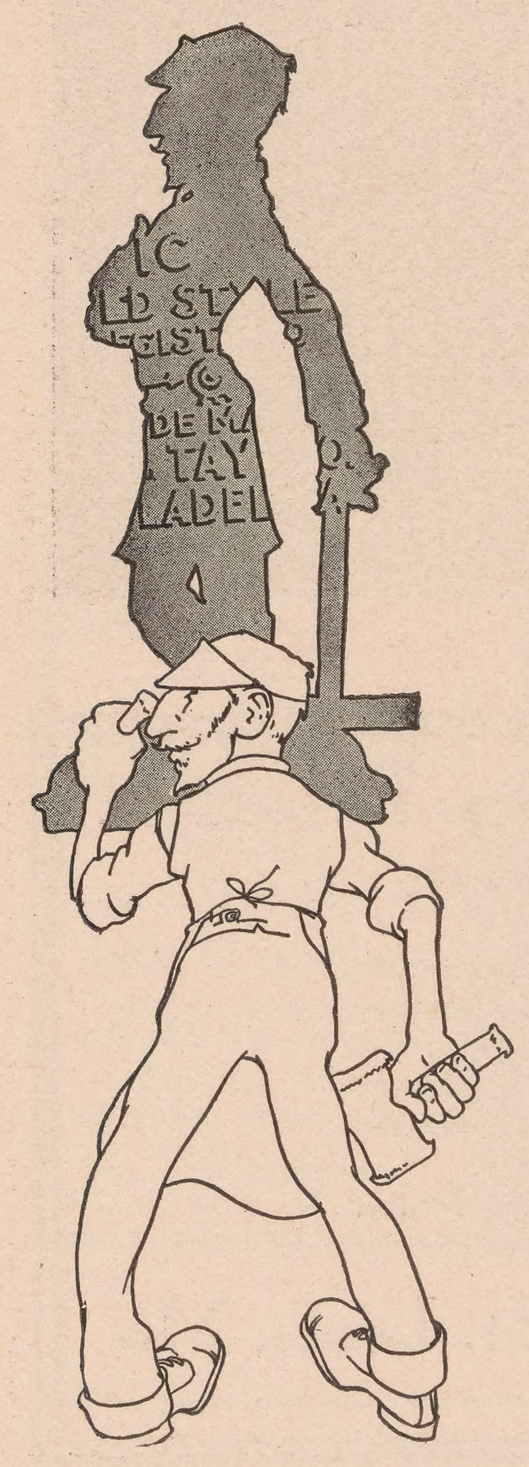

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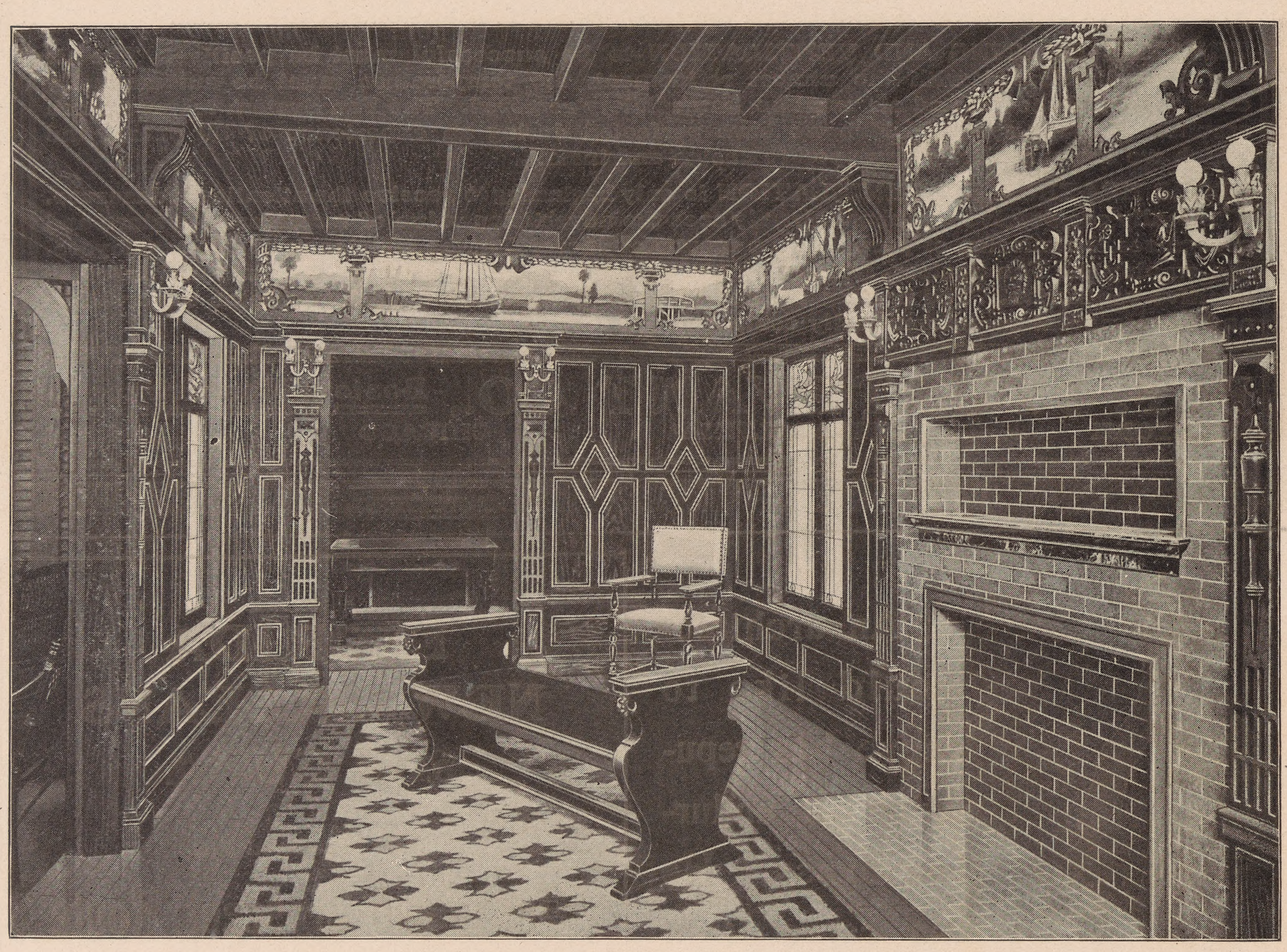

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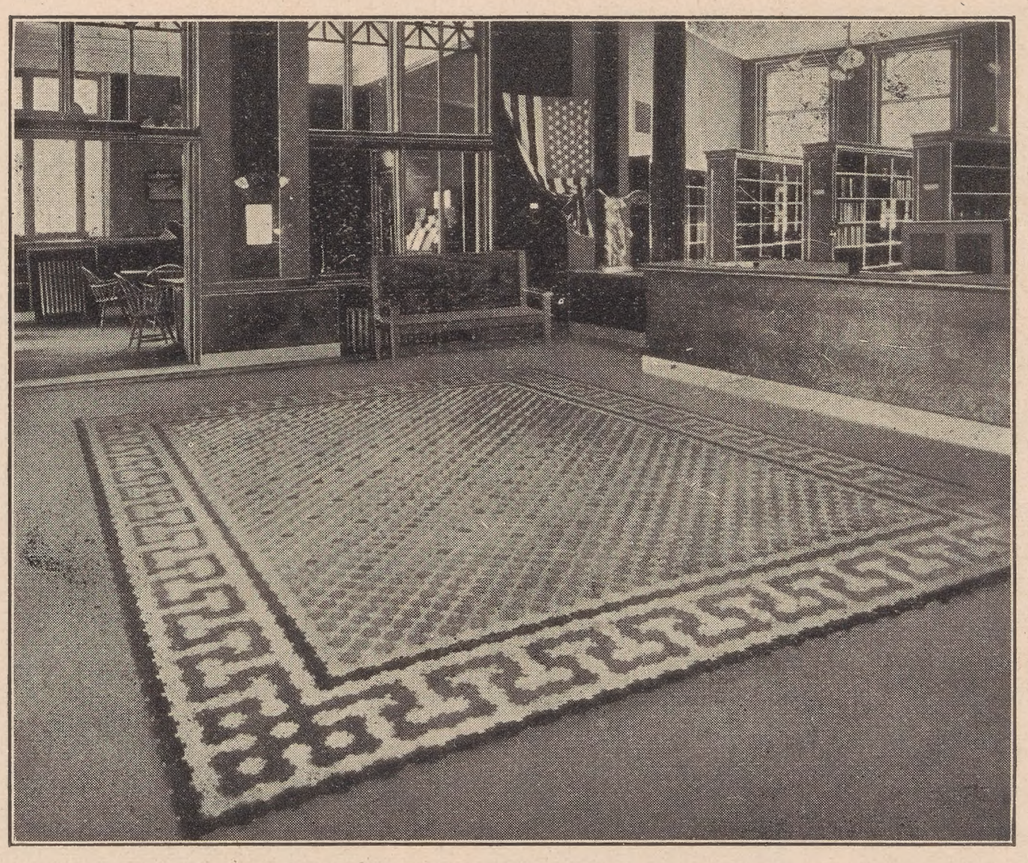

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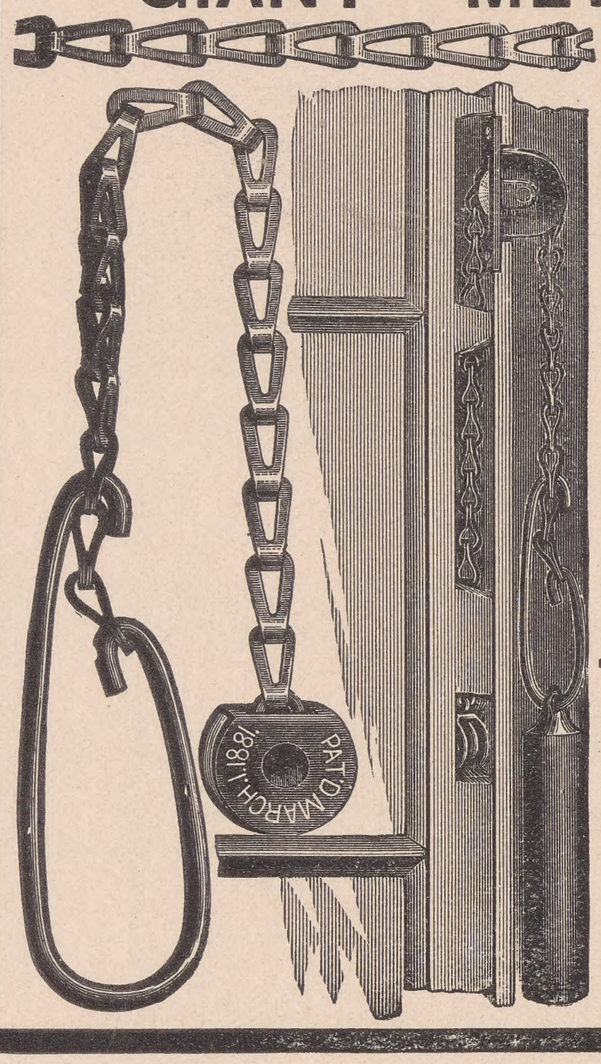

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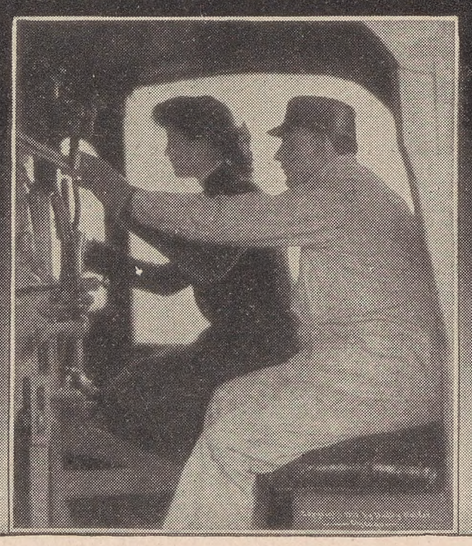

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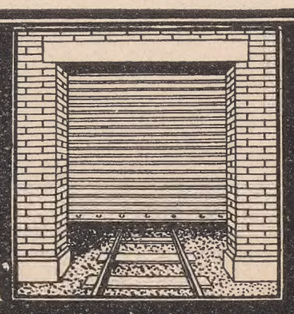

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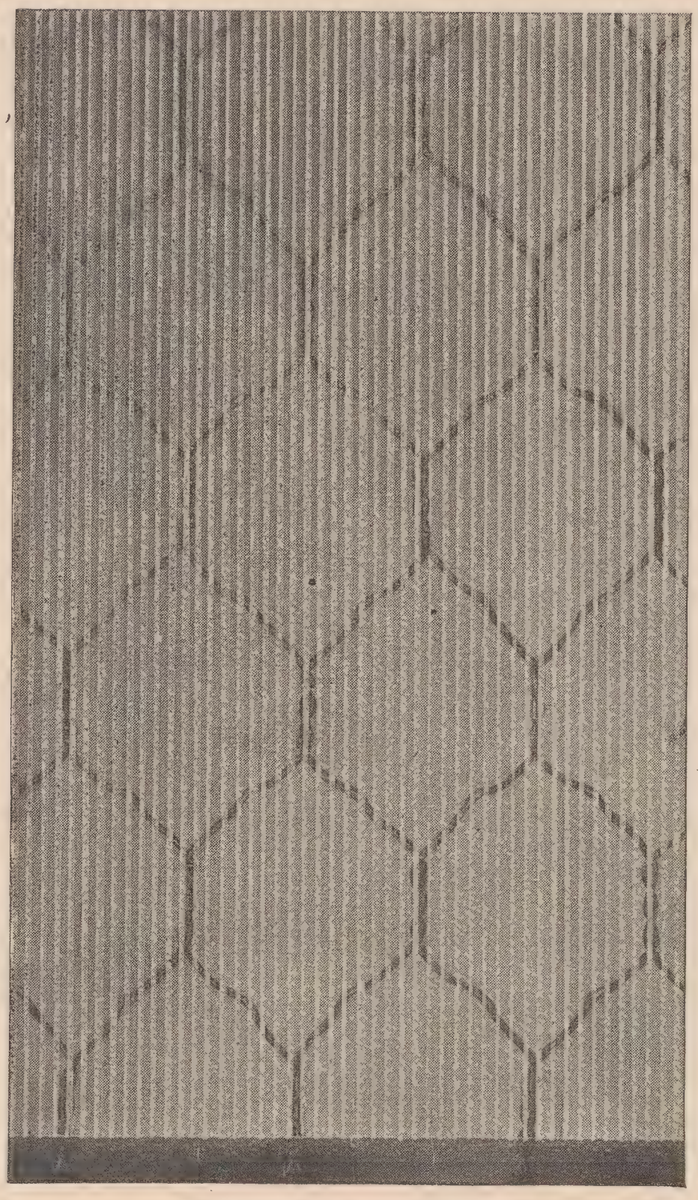

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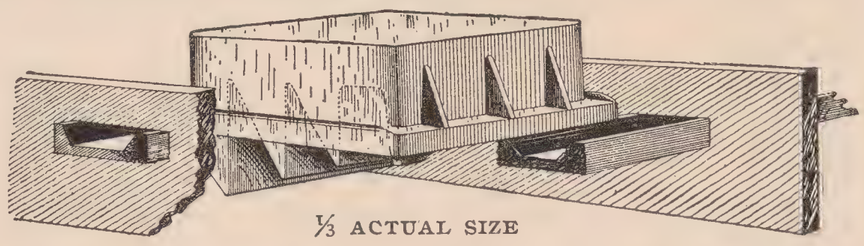

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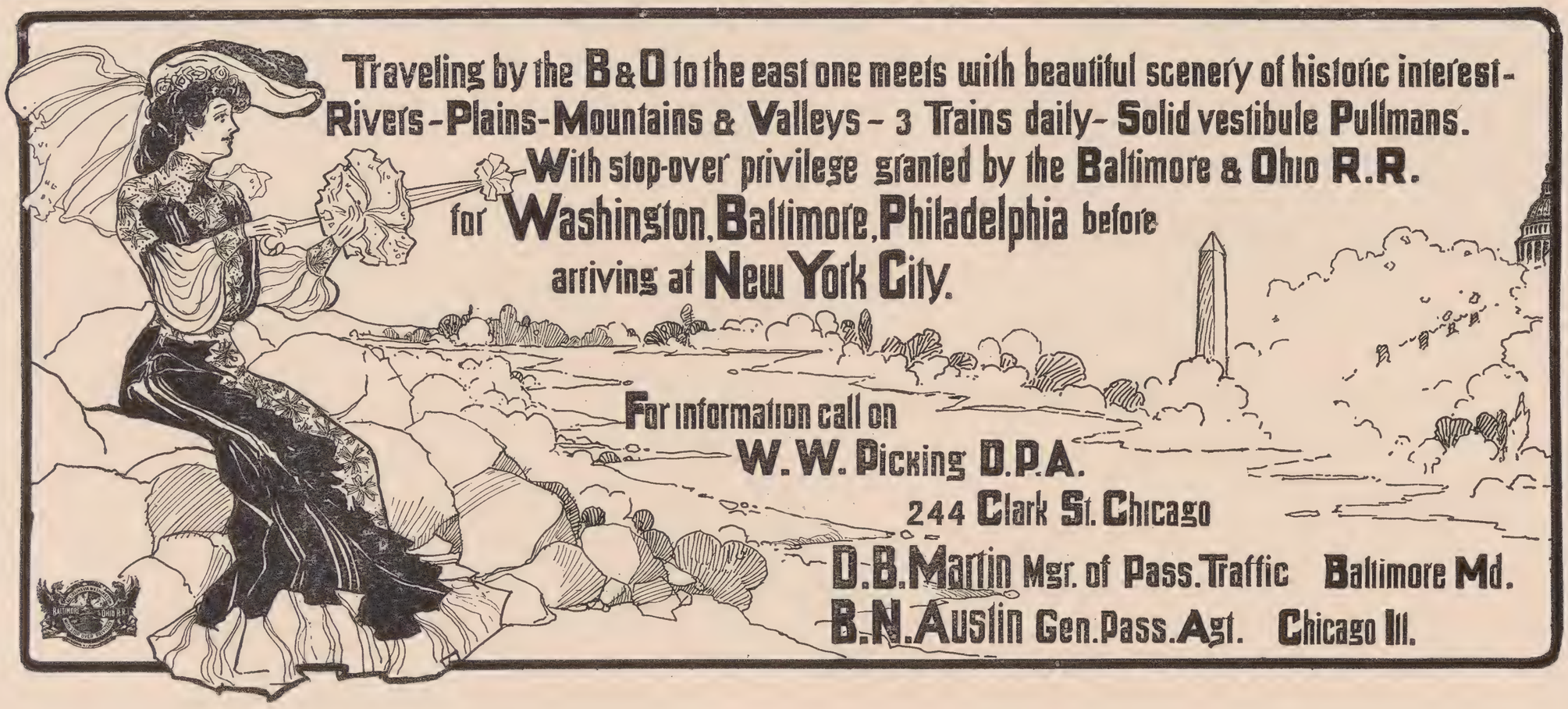
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THE INLAND ARCHITECT AND NEWS RECORD

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NEXT CONVENTION AT PITTSBURG, APRIL 17 AND 18, 1905.

Sixth Annual Convention of Architectural League

The Sixth Annual Convention of the Architectural League of America convenes at Pittsburg on April 17 and 18. The programme as outlined by the executive committee is intended to bring forward a general discussion upon Renaissance, Modern Gothic, Modern English, English Domestic, L'Art Nouveau and Beaux Arts styles, led by architects of largest information and ability. The gentlemen invited to speak are Messrs. Charles F. McKim, C. Howard Walker, Wilson Eyre, Warren P. Laird, Jules Guerin, Ralph Adams Cram, H. B. Herts, Henry Bostal, Russell Sturgis, Louis H. Sullivan, Julius F. Harder, George S. Kessler, Frederick S. Lamb, Charles Mulford Robinson and J. W. McFarland. The discussion which will follow will probably be as interesting and as beneficial to the profession as the papers read. The intent is an effort to establish some basis by which styles can be judged by the votaries of each so that the fundamental basis of style will be better understood. The work of the Architectural League of America in the direction of securing a firm basis upon which all American architects can meet and from which a style suitable to the wants of the people and expressive of our own peculiar conditions and surroundings will result in strong, virile, and destined to be far-reaching and productive. Its influence is already felt among the rising generation of architects throughout the country and to its efforts much of the future trend of architectural thought and practice in the cultivation and establishment of the principles of pure design will belong.

Reasons for Loss Investigated by Underwriters

The committee of twenty of the National Board of Fire Underwriters is engaged in a detailed inspection, by four different parties, of the structural conditions bearing upon fire risks in the United States. This inspection is in the hands of experienced civil, mechanical, structural, hydraulic and electrical engineers and should do much to improve the fire resisting conditions in cities and towns. In spite of the many steel framed fire-proofed structures in our cities the yearly fire loss in the United States is much greater than in any other country. It is twelve times greater than that of England, twenty times greater than that of Italy, and Germany uses our enormous fire losses as an argument against the construction of "sky scrapers" in Berlin. This enormous fire loss is of course due to the fact that wood has been used so largely in our construction and that while the high building has been constructed of non-combustible material the building departments of large cities have advanced slowly, where they have advanced at all, in the direction of compelling non-combustible materials to be generally used in residences and factories, whereas in the countries named, the brick and stone used in the past in all kinds of construction has made great conflagrations well nigh impossible. There is more reason for constructing a three story factory, school house or apartment building of incombustible material than the

skyscraper, for the former are naturally more in danger of fire and the surroundings more combustible than the office building in the heart of a business section. At best there must still be some enormous fire losses like that of Baltimore before the future reduction by stable building is assured, and from New Orleans to St. Paul the liability exists and is chargeable to loose control by municipal authorities and a reckless disposition to "skin" construction upon the part of the people.

Fire Risks to Valuable Art and Book Collections

The destruction of Mr. Sanford White's valuable collection of antiques by a fire that gutted the six story building on West Thirtieth Street, New York, is not only a pecuniary loss which, though probably one hundred thousand dollars, is trivial compared with the loss to the art world. That a collection of such value should be stored in so combustible a building is amazing yet it is too common a practice among collectors. It is difficult to understand how the owner, who is really but a custodian of a rare art collection or a library, can "sleep nights" and know that a fire in the building in which it is located would sweep it away. There is a private library in Chicago owned by one who loves books which lines the walls of a frame house. Those who own such can usually, like Mr. White, afford to live in a fireproof residence; yet it is more than a private privilege, it is a public duty, that they, who by fortune and appreciation can collect art treasures, see that every safe-guard possible shall be placed around them.

Permission to Erect High Buildings in Berlin Refused

In the consular report from Berlin, of Frank W. Mason, Consul General, the details of a fight now going on between progressive commercialism and German conservativeness are given. It seems that the progressives represented by the Central Association of German Industrials petitioned the ministry urging the relaxing of present building laws that limit the height of buildings to 22 meters, to allow the erection of modern steel structures. The Ministers refused on the ground of: first, the increase of "renting barracks;" second, that buildings so high would be beyond the present water supply, and consequently not sanitary; third, beyond the protection of the fire department. The authors of the petition replied that it was not proposed to carry buildings to excessive heights and that the water supply question could be easily met and pointed to the resistance of the steel framed and fireproofed buildings at Baltimore, which so fully vindicated their superior safety, to emphasize their argument. The discussion thus stands at present and it reminds one of similar discussions some twenty years ago in Chicago when the first steel structures were built and the conservatives fought them in the same way with the same arguments. It is true that the fireproofed steel structure dominates its locality and destroys harmony of street line, but beyond this, it is more sanitary and safe in many particulars than any other class of building and the commercial advancement of cities demands their adoption wherever the centralization of interests calls for a condensation of working forces.

A Sea Level Canal at Panama Proposed

The commission for the Panama Canal has swung round to the original project of De Lesseps, that of constructing a sea level canal, the engineers under the leadership of Chief Engineer Wallace having made this recommendation after a careful study of the possibilities. The difference is from sixty to eighty-five feet according to the different surveys that have been made from time to time and will cost about double that of a lock canal. It should be understood however that an actual sea level canal would be unoperative because of inequality of level owing to the twenty foot tide on the Pacific side and the one foot tide on the Carribean side, but this would only necessitate two or perhaps three locks while a lock canal would involve six or eight. In the twenty-seven years since Lieutenant Wyse obtained the concession to construct the canal from the Columbian government the enterprise has had a varied experience. De Lesseps estimated that it could be built in eight years at a cost of one hundred and twenty-seven millions. He soon gave up the sea level plan and some two years later, the company having spent two hundred forty-six millions, a large portion of which appeared to have been squandered, the company went in the hands of a receiver. The first American commission reported in favor of a canal eighty feet above the sea level at an estimated time of ten years. The present commission estimates that a sea level canal will take ten years to build, but expert engineers say that it will take twenty. To those who in '49 walked across the isthmus this seems an under estimate, and in fact the task would seem impossible except for the knowledge that present methods and determination can tunnel where it cannot level or cut through the mountains and that time and money can accomplish almost any engineering task. Congress should by all means decide on a sea level canal as the cheaper of the two considering the many advantages to be gained through decreasing the number of locks.

Legal Aspect of Profession in England and America

While architecture has been generally recognized as a profession in England for many years, and Walter Scott wrote a description of the work of the landscape architect in contrast with the slow education of the American people, in the legal aspects of the profession this country seems further advanced than England. There we find a case allowed in which counsel protested "in the name of the public against a small body sitting in a room and making out a scale which they sought to impose on the public." The judge supported this and directed the jury to disregard the Royal Institute of British Architects scale of charges. In the courts of the United States the claim of the American Institute that the scale of charges are "usual and proper" generally obtains. It is however singular that, of all the professions, architecture has the least recognition in law and that architecture has the least recognition in law and that while a lawyer's or doctor's scale is unquestioned that of the architect is open to the slurs of lawyers whose basis for charges is seldom anything so tangible as an architect's design and plans.

INTERIOR VIEW SECOND NATIONAL BANK, WINONA, MINN.

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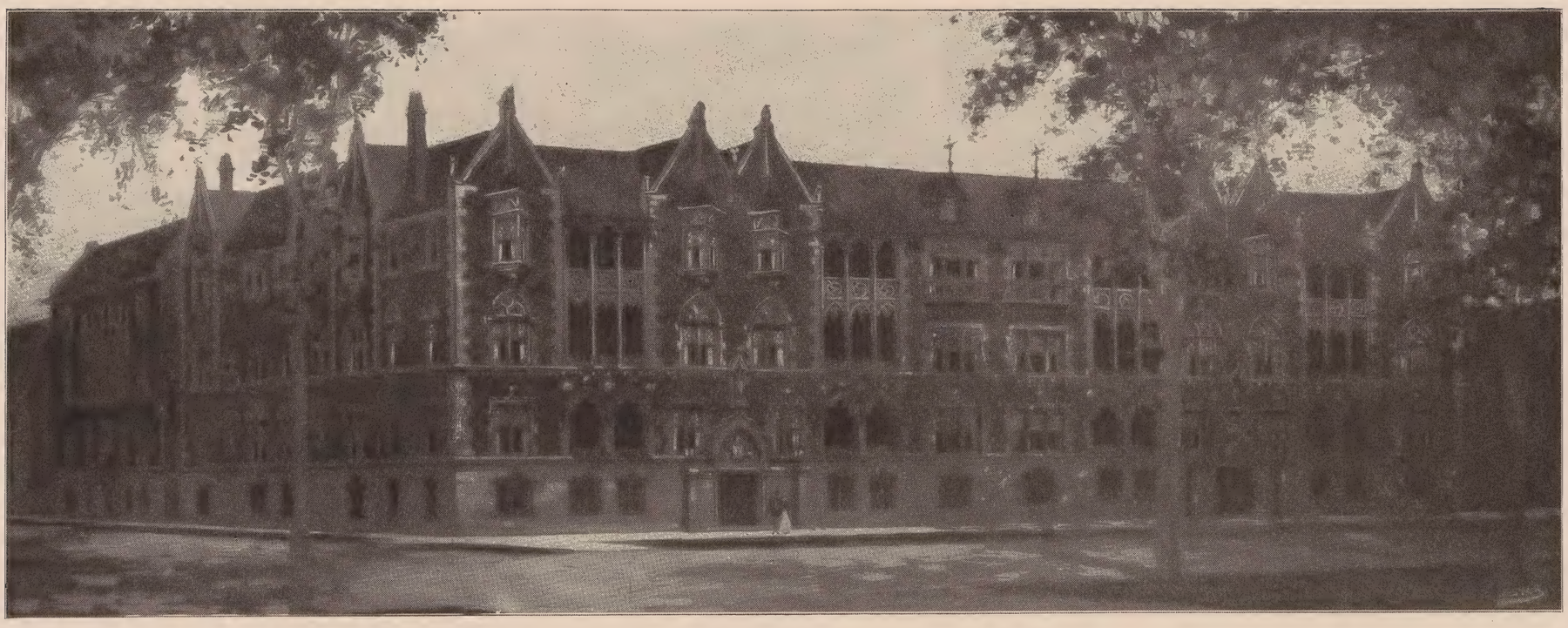

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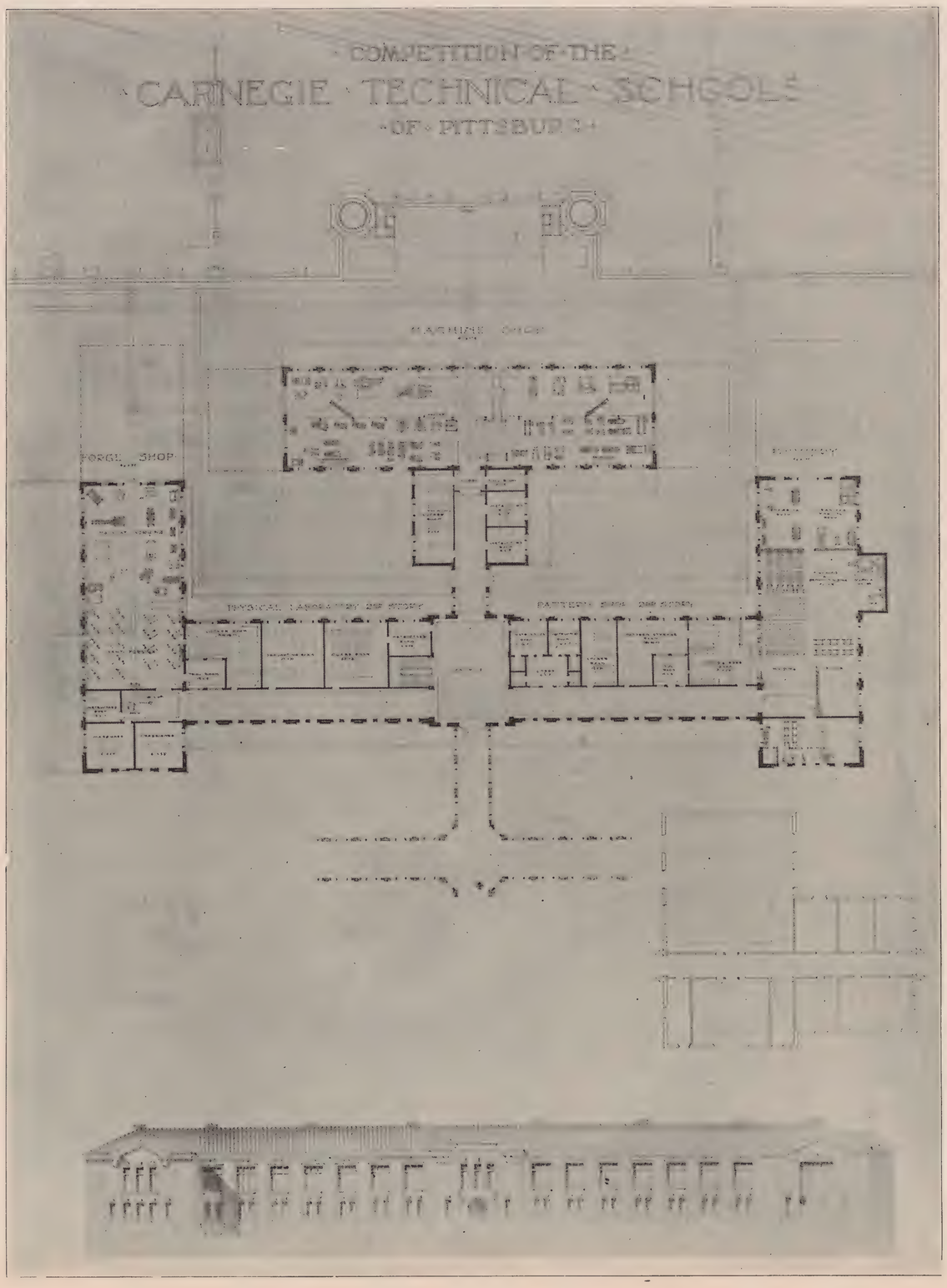
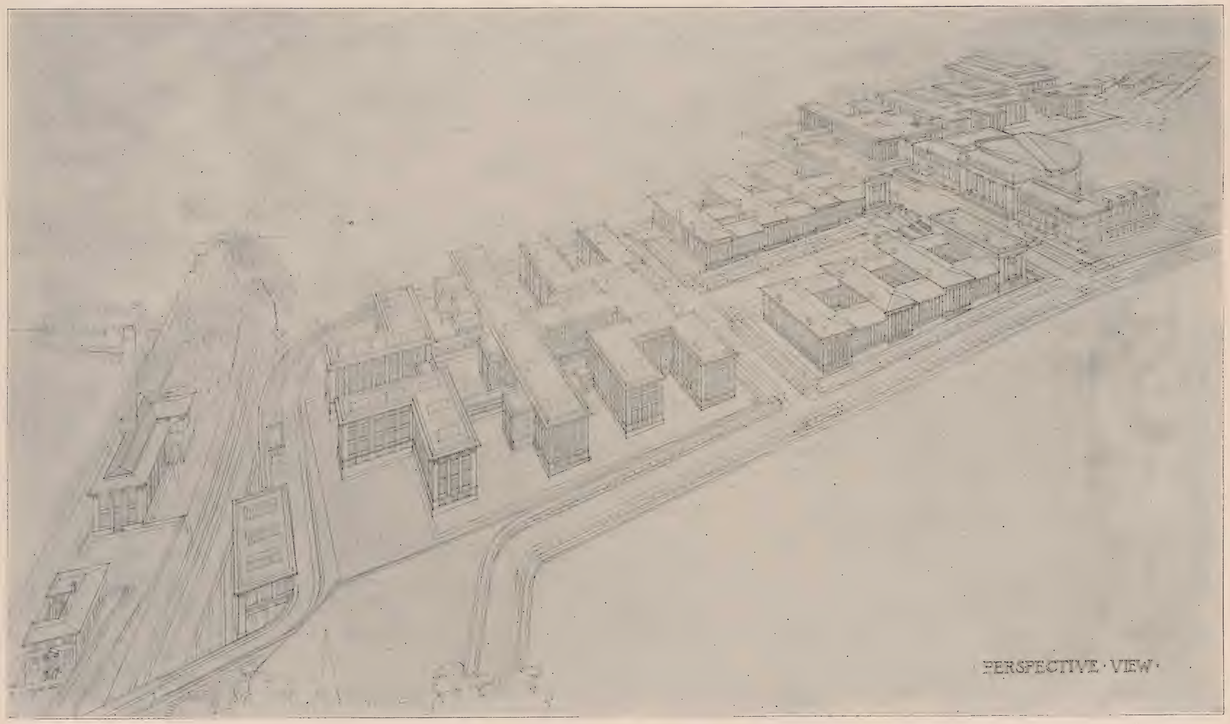
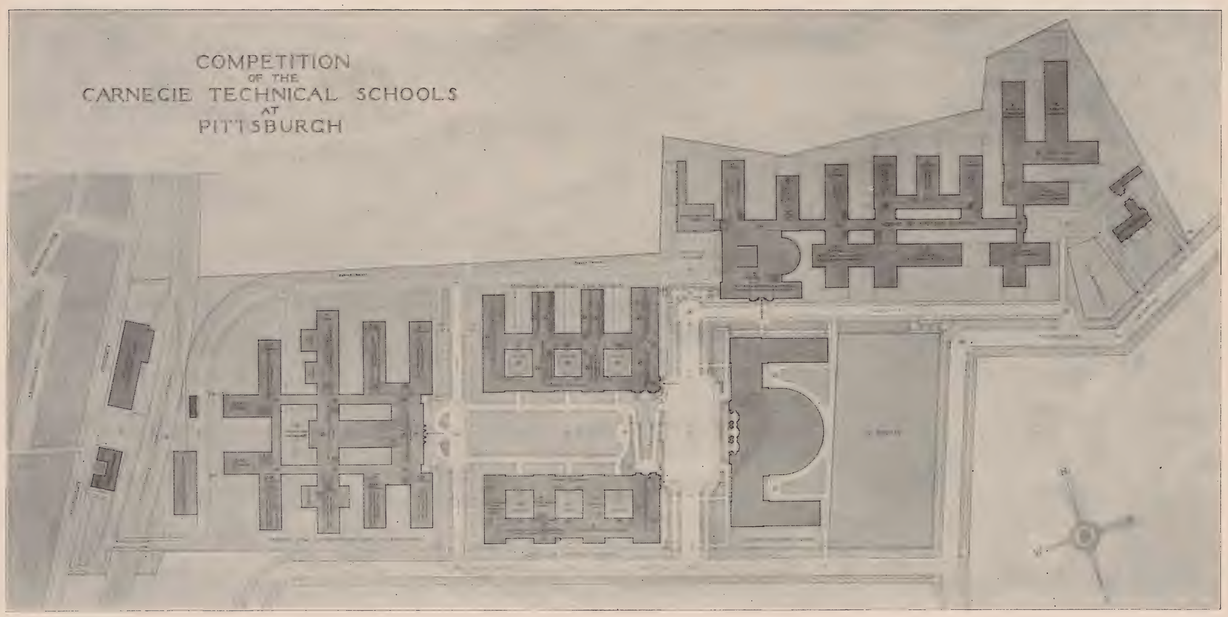


COMPETITION OF THE CARNEGIE TECHNICAL SCHOOLS OF PITTSBURGH, PA.

Design Submitted by HOWELLS & STOKES, ARCHITECTS, NEW YORK



PERSPECTIVE VIEW



BLOCK PLAN

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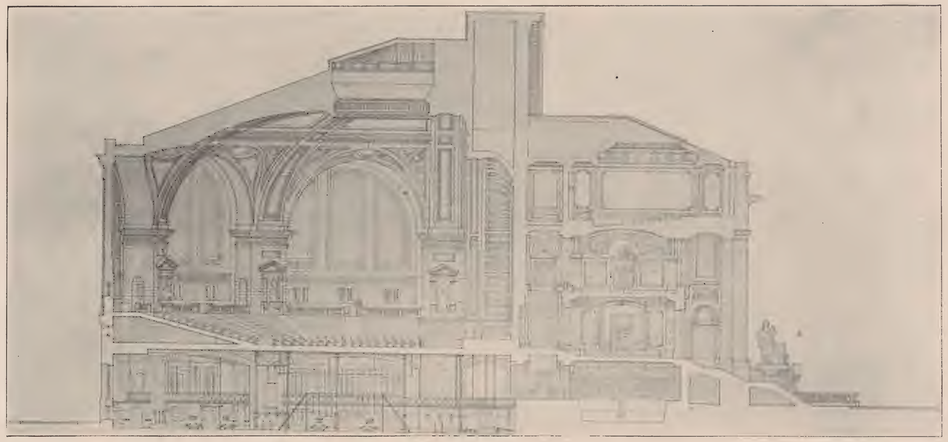
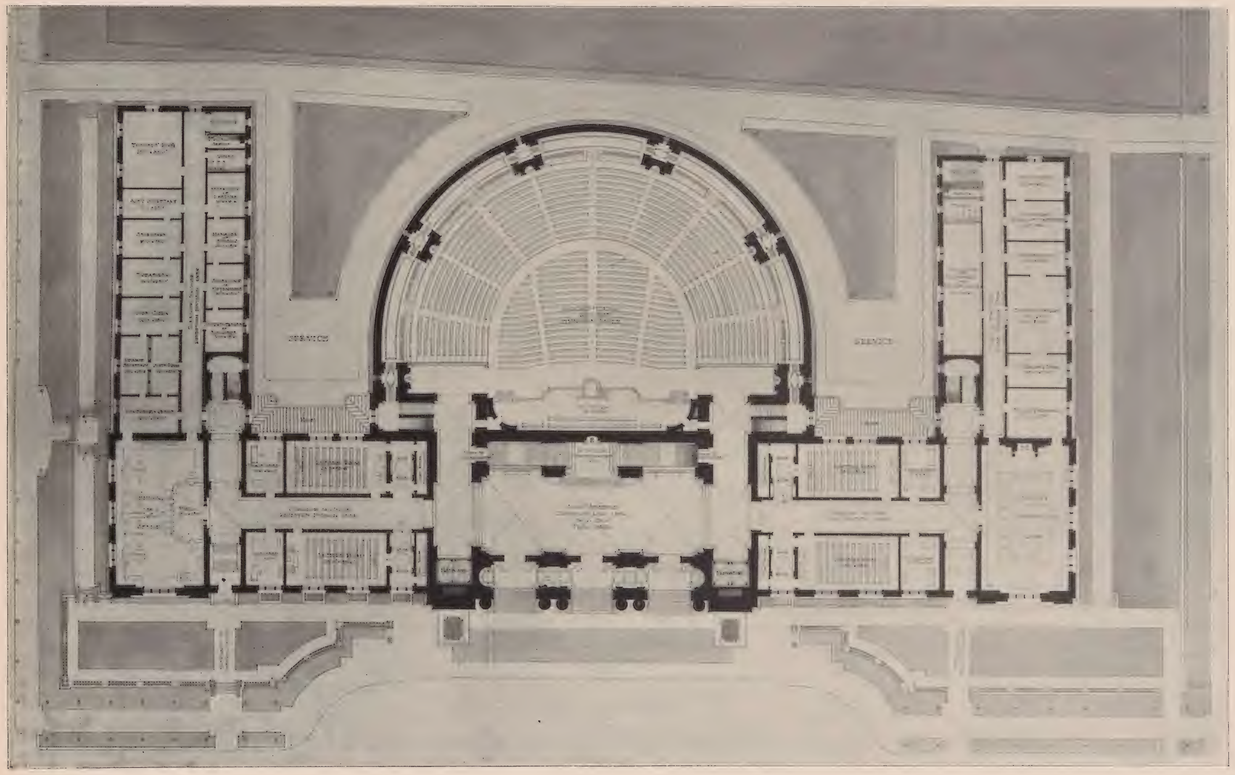
MAIN BUILDING



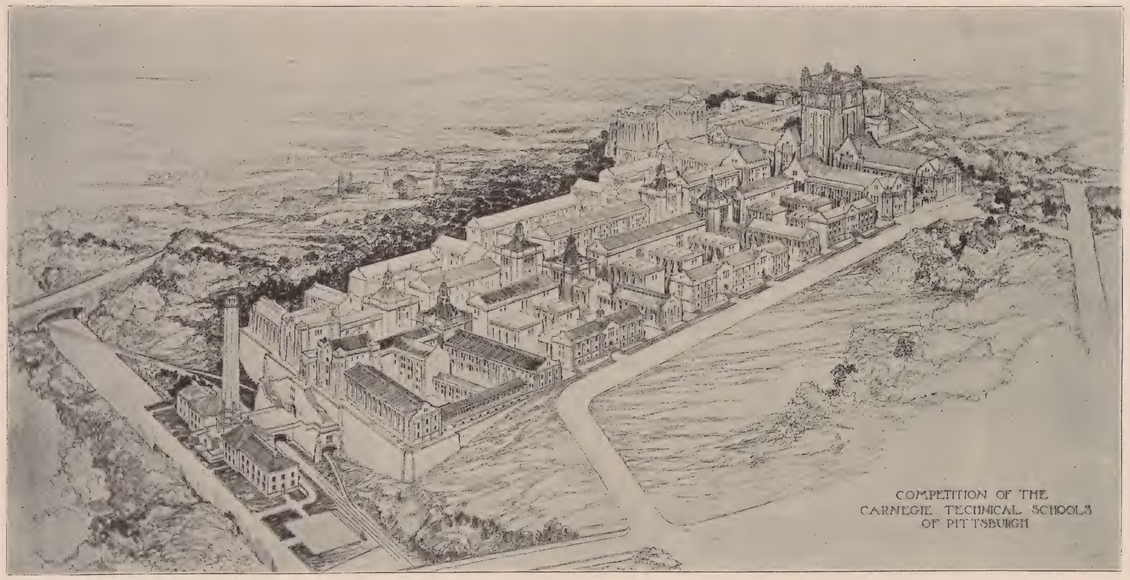
TRANSVERSE SECTION



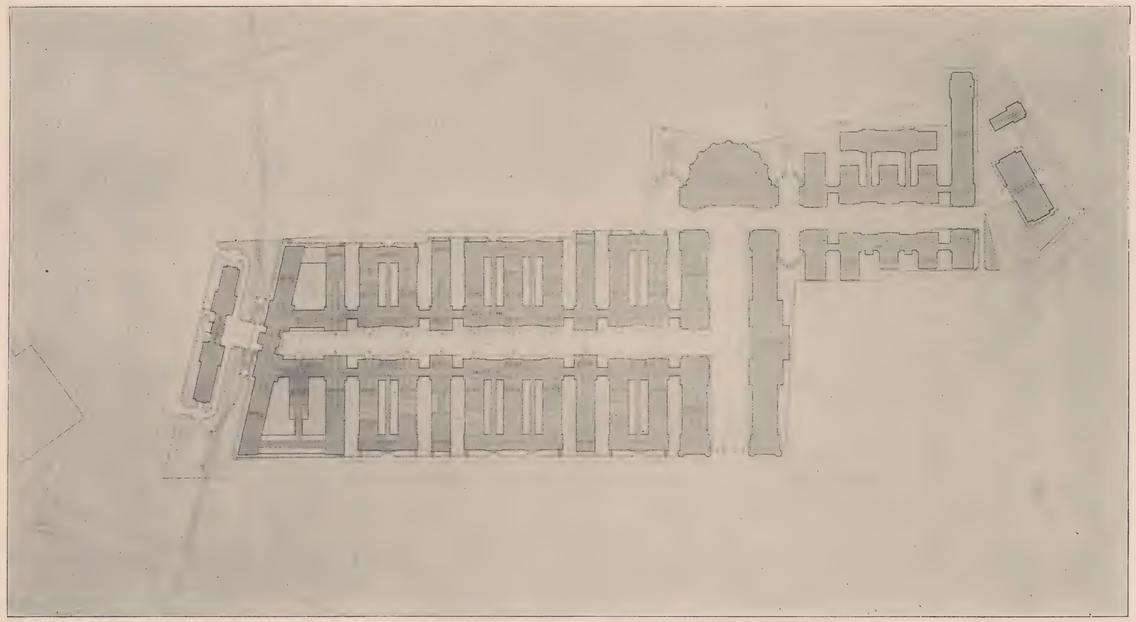
ADMINISTRATION GROUP. PLAN OF MAIN BUILDING

COMPETITION OF THE CARNEGIE TECHNICAL SCHOOLS AT PITTSBURGH, PA.

Design submitted by CARRERE & HASTINGS, ARCHITECTS, NEW YORK



PERSPECTIVE VIEW



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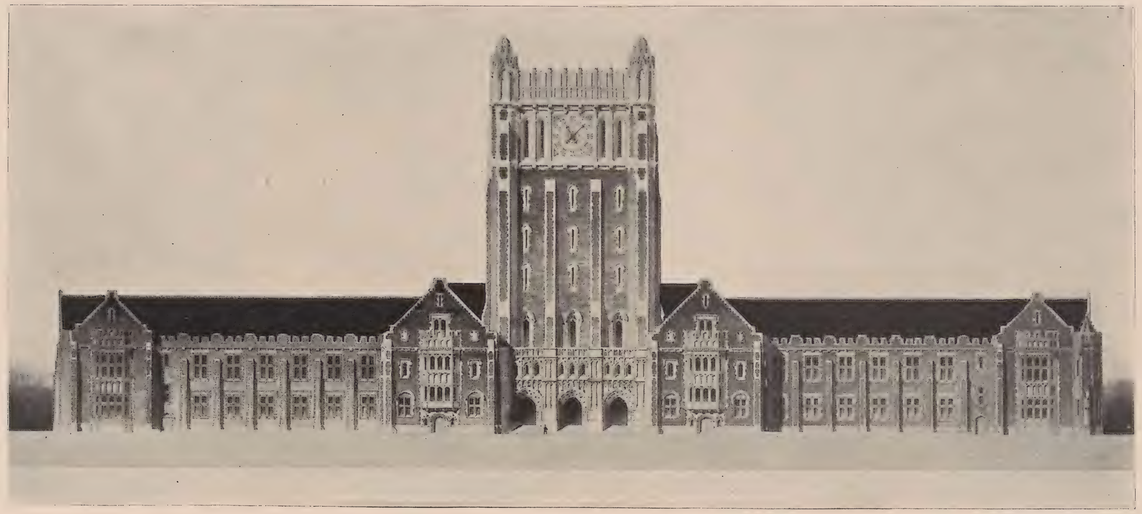
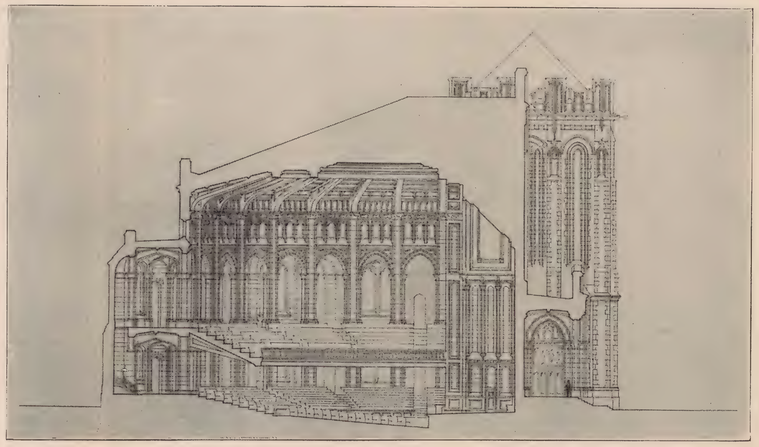
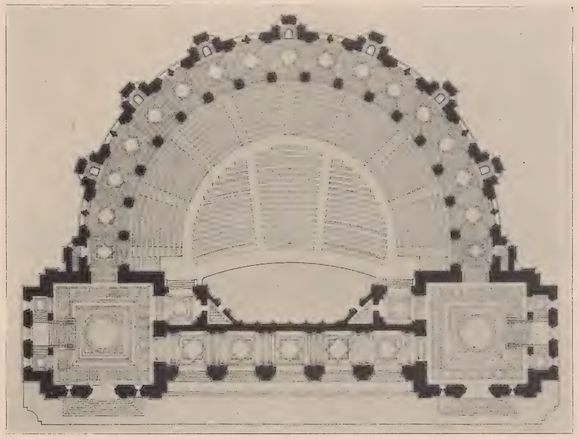


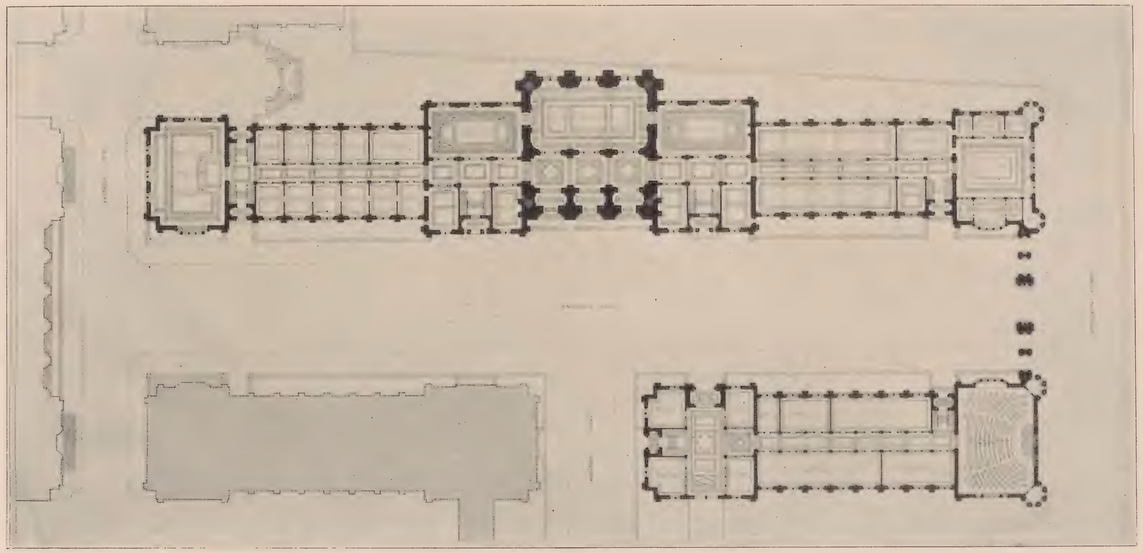
Administration Group Main Building, Front Elevation



SECTION



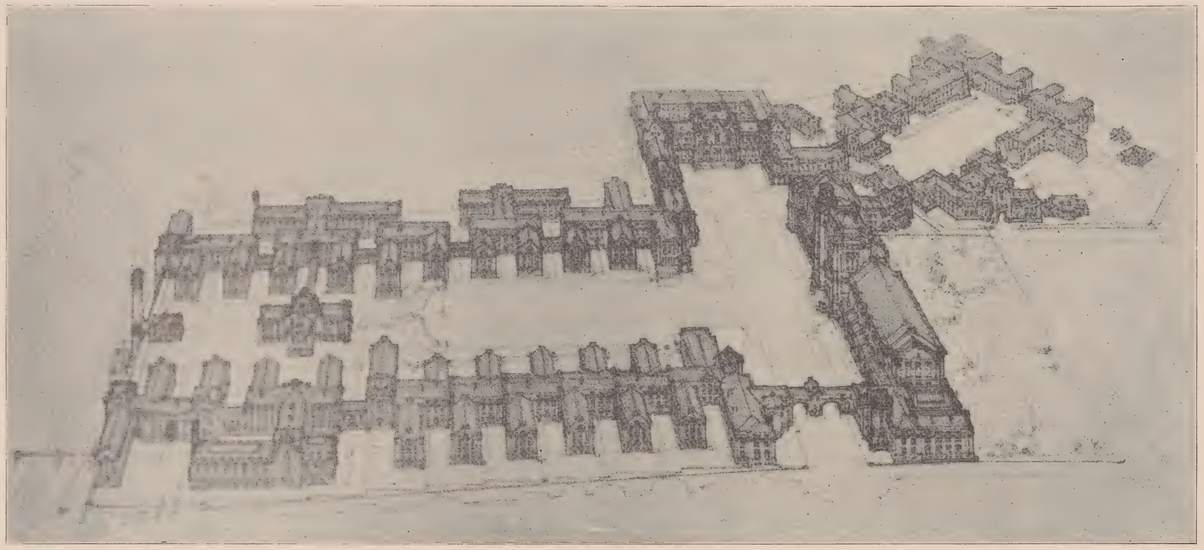
PLAN ASSEMBLY HALL



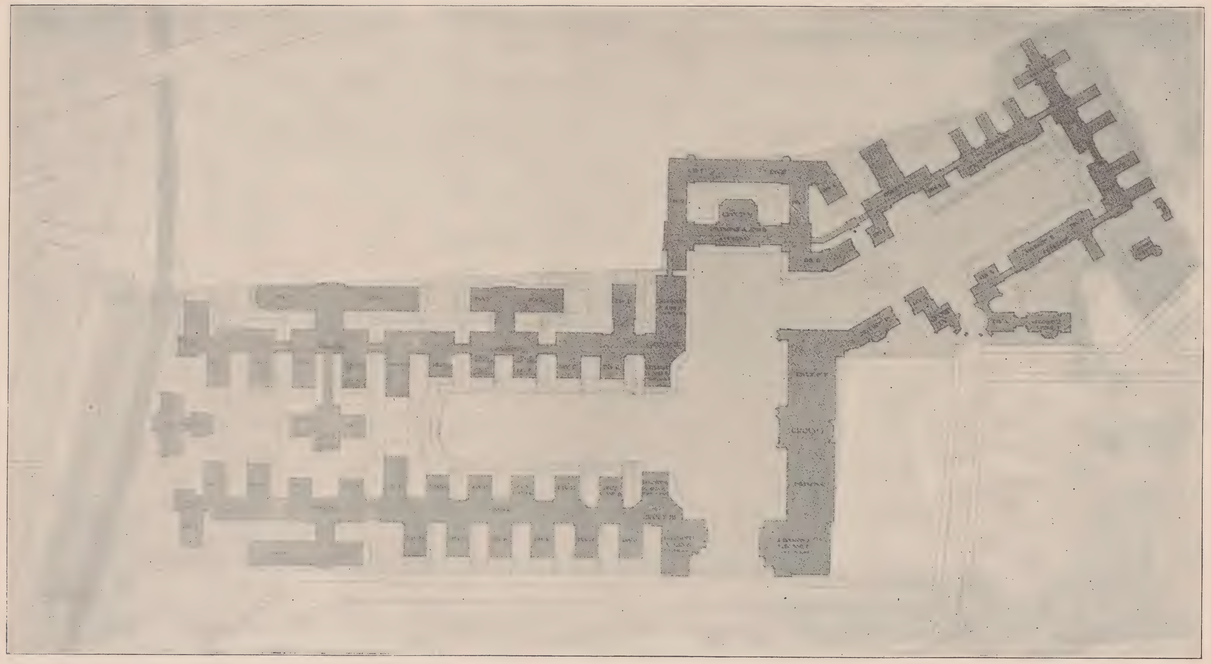
ADMINSTRATION GROUP. PLAN OF MAIN BUILDING.
Applied Science Group, Div. A, First Floor Plan

COMPETITION OF THE CARNEGIE TECHNICAL SCHOOLS OF PITTSBURGH, PA.

Design submitted by GEORGE B. POST & SONS, ARCHITECTS, NEW YORK



BIRDSEYE VIEW



BLOCK PLAN

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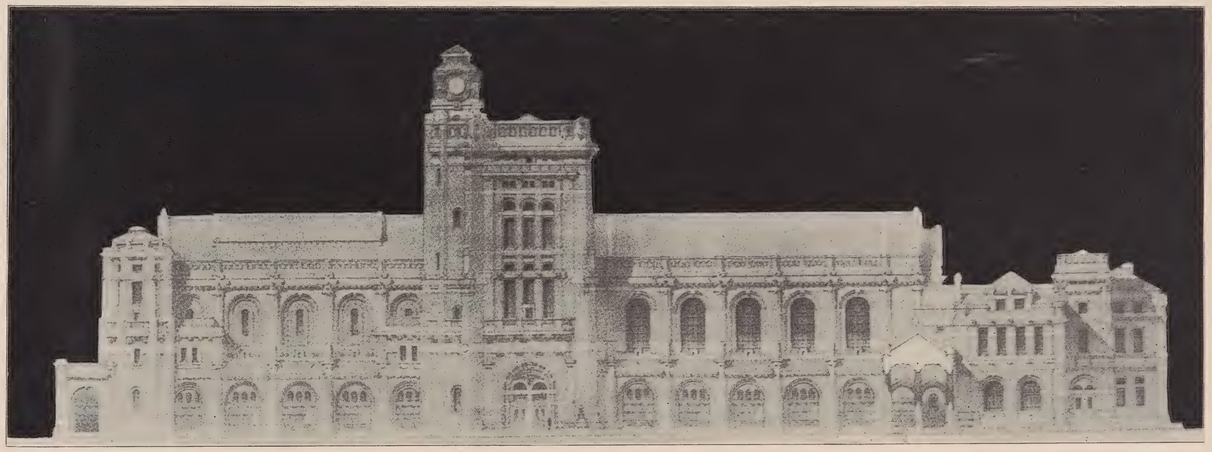
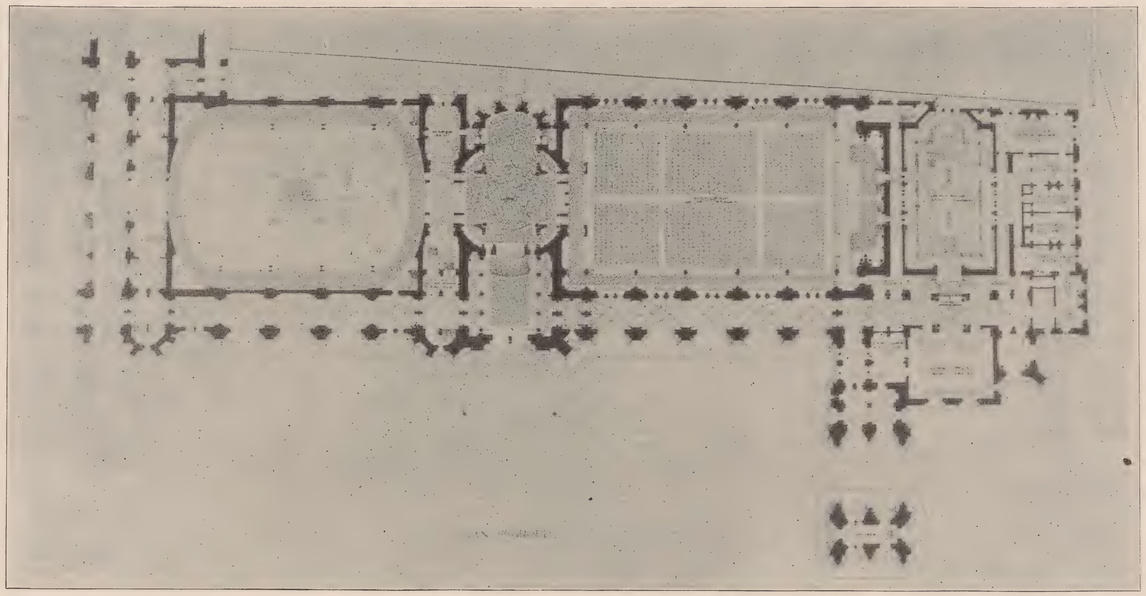
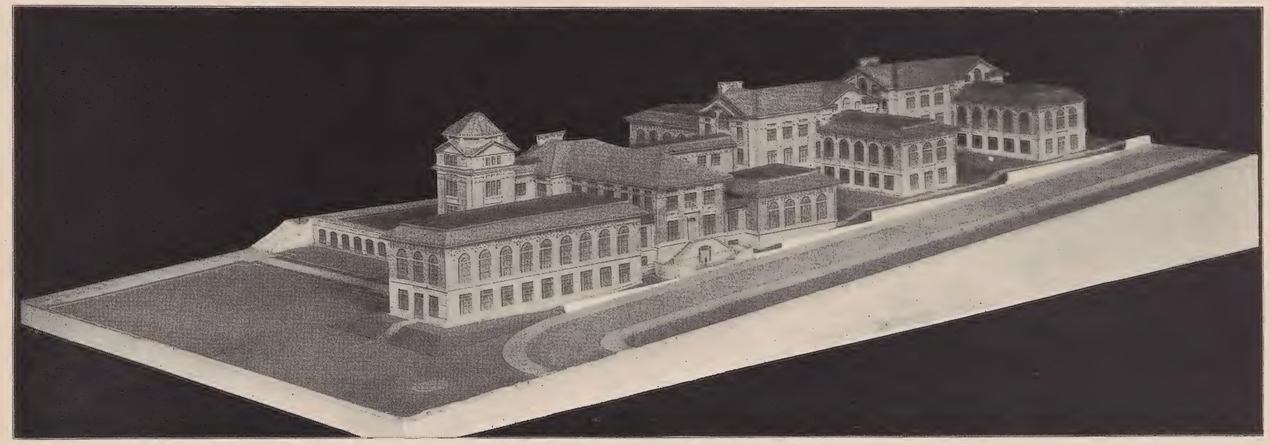


ELEVATION OF GROUP 1



PLAN OF GROUP 1



MODEL SHOWING PORTION TO BE BUILT IN 1905

COMPETITION OF THE CARNEGIE TECHNICAL SCHOOLS OF PITTSBURGH PA.

Design submitted by PALMER & HORNBOSTEL, ARCHITECTS, NEW YORK

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VIEW IN BALCONY FOYER, ORCHESTRA HALL, CHICAGO

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INTERIOR VIEW, ENTRANCE, ORCHESTRA HALL, CHICAGO

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GOVERNMENT WORK BY COMPETITION.*

BY IRVING K. POND, ARCHITECT.

MORE by way of parenthesis than of introduction I wish to say that I am far from being a thorough convert to a belief in the exalted virtue of competition. In the present stage of popular intellectual and aesthetic attainment, competition seems to me to be a not particularly uplifting influence in the cause of art. In architecture their appeal is made most strongly to two distinct classes in the profession, in the first the ambitious neophyte who is endeavoring to gain a foot-hold, and, in the second the canny past-master in the art, the commercial architect, to whom a commission is the breath of life, whose motto is "job for job's sake," who may have little or no individuality to express, and whose aesthetic conscience demands no devotion to the ideal. There is reason to feel that the real ends of competition will be better served by the efforts of the innocent neophyte, who is steering his course by the lights of a high ideal than by those of the canny master who trims his sails to the winds and so, probably, reaches port, too frequently however with a water logged hulk and not a staunch ship, flying pennants of beauty. It is a truism that the wise, commercially wise, architect enters a competition to win, and not necessarily to express his best thought. If he have temperament his work may escape the commonplace, but one who is studying the character and bias of client or judge cannot hope or expect to do anything beyond the strictly conventional; for where in architectural competitions, in other than most rare and exceptional cases, is there a judge who, if he knows, is so true to himself that he dares to place the stamp of approval on ideas outside of the established conventions.

It is not impossible that these remarks, though parenthetical and seemingly very general in character, may have a direct bearing on the matter of government competitions.

The government of a democracy should in all its functions embody the highest ideals of the people. In its relations with other governments it should not fall short of the highest ideal of duty, in its dealings with its own citizens it should not fall below the highest standard of justice; and as in its political and economic relationships so in its attitude toward art only the highest and best should be considered as within the range of the possibilities. With architecture, the noblest form of art, the government is intimately concerned, for the various departments and bureaus of the service must be adequately housed. The architecture of the government should not fall in its expression below the highest aesthetic ideal of the people. The architecture for the people should, if possible, be on a higher plane than the architecture of the people. How this high standard in government architecture is to be reached and maintained is the present duty of this body to study.

Architectural service for the government may be performed, first, by governmental bureaus or, second, by private practitioners. Under existing laws both methods are operative. To make the governmental conditions clear let us note that certain of the departments act independently in the matter of architectural commissions. The War and the Navy for instance deal with the problem, each as it sees fit. Congress fills certain architectural positions as special bills are enacted calling for special service. But one department, the Treasury, dealing with affairs pertaining to civil government, maintains an Architectural Bureau, the head of which is known as the Supervising Architect of the Treasury. Acting under authority of the Secretary of the Treasury, the Supervising Architect himself may design and supervise certain buildings, and certain others he may give out to be designed and superintended by private architects. These architects are, under the laws, named by direct appointment or chosen in competition. It is with this latter topic that this paper has specially to deal. However, I cannot speak on the narrower subject of competition without first surveying generally the broader fields to determine if possible the reasons which make desirable the commissioning of private architects to do work under any or all departments of the general government. We are confronted at the start with a consideration which involves the very nature and character of the government. Shall the government maintain a corps of men sufficient in skill, experience and numbers to design, supervise and handle the vast business pertaining to the multitude of buildings which are now in demand and are coming more and more into demand by reason of the ever growing necessities of the various branches of the general service? Or shall commissions be given to private architects, conveniently located and well equipped for the work? Shall the government maintain mills and shops and factories together with a force of artisans sufficient to construct these multitudinous buildings? Or shall the work be given out to responsible and specially equipped builders and contractors? Shall the government maintain a force of mural decorators of the standing of those who, for instance, beautified the walls of the Congressional Library, or shall decorators and sculptors of note be called from private life to embellish the nations buildings? Shall the government assume the form of state socialism or shall it continue to be truly democratic in form, a government of the people, by the people and for the people? All of this is for the people themselves directly or through their chosen representatives to say. As to the possibility of the government performing its own architectural service, I would not maintain that the present Architectural Bureau might not be so expanded as to meet the growing necessity, but I should question the wisdom or desirability of such expansion; and for many reasons, some of which may be surmised from the foregoing questions, and others of which may be gleaned from what is to follow. Whatever strictures may have held against government design in the past it must be said that just now the character of government work is on a comparatively high plane, the work of the present Supervising Architect and much of that of his eminent and immediate predecessor being of a high order of merit. But at the time when government work was still open to justly adverse criticism the better class of private practitioners were setting new and even higher standards, the benefits of which are seen in the government work of to-day. The government office has never taken the initiative in the advancement of architecture either on the aesthetic side or in matters mechanical. This is set down, not as criticism, but as the statement of a fact which, under the conditions, cannot well be otherwise. The rigid system and the conventions which perforce lie behind and shape the conduct of any governmental bureau from a barrier yielding slowly to outside influences. And yet, if a high standard of architecture is to obtain in government work new vitality must never cease to flow and fresh impulses must ever control. No office, large or small, public or private, can go on indefinitely doing work in limited channels, specializing, that is, without the character of the work becoming lifeless, stilted and perfunctory. The new life and thought must come through a complete internal renovation of the office or by the constant introduction of fresh impulse from without. Can this impulse come into governmental activities from richer source than the broad and varied experience of the private practitioner? Now, whether results at the hands of the private practitioners will prove eminently satisfactory will depend much upon the character of the men selected, either by direct appointment or in competition, and if in competition, upon the conditon, or better the atmosphere, which surrounds that competition. And right here we feel the force of my opening remarks. What gain is it to government architecture if the competitors study existing models only to change them slightly but not so much as to prejudice their effort with the judges of the competition, who are supposed by the competitors to know the "practice of the Department" and who presumably will let that knowledge affect their judgment? Not much, I imagine, will result beyond what has already been accomplished. It will be a great day for architecture when in competitions, whenever or by whomever inaugurated, the judges add to their supposed knowledge of "what

*Paper read before the 38th annual convention of the American Institute of Architects at Washington, February 14, 1905; revised by the author for the INLAND ARCHITECT.

the Department wants," a deep insight into what architecture needs, and let insight lead knowledge to a better judgment. When that day comes, other architects besides the two classes mentioned at the beginning will find advantage in competitions, and what is of advantage to these other architects will be of advantage to the client and to the cause of architecture as well.

Let us now consider the manner of selection and the character of the men to be selected. Under ideal conditions I should be inclined to have the private architect for governmental work named, as he is for private work, by direct appointment. However, ideal conditions do not always prevail, and, as the public mind is now constituted, naming by direct appointment would probably arouse a storm of protest no matter how pure the motives of the representative of the government making the selection might be or with what singleness of purpose he were seeking the public good. When conditions do not favor the selection by direct appointment selection may be made through competition. While it is the opinion generally of architects who have engaged therein, that government competitions are manifestly fair in their management, yet it seems to me that the burden of choosing the competitors in the great number of competitions likely to arise is too onerous to be borne by the head of a single Architectural Bureau. It were better perhaps to have the government represented in these matters by a permanent commission, while the head of the Bureau is left free to design and supervise those buildings which necessarily fall to his office, and to act in his executive and supervisory capacity in connection with works in charge of private architects. The supervising office will in this find a quantity and quality of work quite sufficient to the strength of a strong and capable head. And now, who among the private architects shall be called upon to undertake the execution of government work? It seems to me eminently fitting that government work should fall to the men who have earned a right to consideration only through high achievement—which high achievement must be the resultant of character and experience; men whose design is marked by distinction, whose executed work reaches a high standard of structural excellence, who in business are capable and in all respects above reproach. These men and these alone should be invited to enter the competitions. For then, in the final award, the government is safe; to the care of such men the government may confide its work, as many another client already has done, giving only that constant and discriminating supervision and advice which it is the right of any careful client to give, and the duty of any conscientious architect to accept. May it not be that to such men certain freedom of initiative may safely be given and there be not thrown around them those rigid conventions which must of necessity hedge the draughting room of a governmental bureau? For it is quite possible that the individual methods by which these men have achieved distinction in private practice, are as desirable to the government in the interest of economy and expedition in building operations as certain of the conventions of the bureau are necessary for the elimination of friction in the conduct of those operations and in the final adjusting of accounts. While the government, in instituting a competition, should invite only such men as above suggested, yet it might well consider the offerings of other and uninvited men; for there is always the chance of getting a fresh and vital thought, especially from the neophyte when he has done his work with a clear vision of the ideal before him. But there is more to architecture than design only, and if the work of the novice prove to be the most vital among the designs submitted the author may be awarded the commission and there be associated with him a man of experience in the practical side of the art. In this manner there may come a distinct gain to the high cause of architecture, which cause should also be the government's own.

These are more than interesting generalities surrounding the subject of competitions. There are also eminently practical considerations to be noted, some of which apply equally in case of direct appointment. For instance, when the achitect is first invited would it not be well for the government to state, if indeed such is to be the case, that the experience and practice of the private architect are to count for nothing, but that in all its details the work is to proceed in strict accordance with Departmental Conventions? The architect has a right to this knowledge in advance so that he may advise with himself whether his desire or his loyalty is sufficient to determine him to enter the competition. Strange as it may seem to some, more than one architect has entered these competitions not for the sake of pecuniary profit to himself but from a sense of duty and loyalty. Another practical consideration is that every invited architect should be informed in the original programmme, of such matters as the government holds to be fixed beyond the peradventure of change or revision, and particularly of such requirements as, while they may or may not inhere in the nature of the work, the government demands, and which in many instances materially affect the cost of the building, especially in the smaller work. This will entail no hardships on the government, no handling of bulky documents, for a printed page will convey all the necessary advance information.

The competition having been held and the commission awarded, in all justice the government, like any other client, should furnish to the successful architect all the necessary instructions before the general drawings are begun (not to say before they are completed.) Architects as a class are not adepts in the occult science of mind reading and cannot know to the last detail the exact and absolute desires of the client in absence of ocular or aural instructions. Probably the above suggestions are unnecessary and the matters they embody are now details of Departmental practice; but possibly the time was when they were not.

I want to be understood as saying that the government, like any other client, has the right to impose such legitimate conditions as may be necessary to insure certain definite and desired results in the design and construction of a building. I do not believe it is in the province of the architect to dictate as to the needs and desires of a client who knows and has reason to know his own mind. The architect who cannot conscientiously accede to the client's desires should step aside.

The government in employing a private architect should stand in the same relation to that achitect, it seems to me, as does any public or private corporation or any individual. The difference in the situations favors the government neither in degree nor in kind, for, like the government, either corporation or individual may be employing various architects on various works at one and the same time, while many a corporation or private client, indeed, expends far greater sums in a single building operation than does the government on any one of its buildings. Generally the individual client comes into personal relationship with the architect; the corporation deals with the architect through its head or department chief or through a committee; the government must touch the architect through the medium of the Supervising Architect in work done under authority of the Treasury Department or through chiefs or boards in work under other departments. So that these boards or the Architectural Bureau of the Treasury must be to the government what the emotions and intelligence are to the private individual. The emotions will aid in the recognition and establishment of good art and the intelligence will act in executive matters and in business management. Common sense which contains grains of emotion and intelligence serves in lieu of system and convention in case of the individual client. System, however, as has been said, inheres in the conduct of governmental bureaus. But system is neither emotional nor intelligent, and should not be permitted to cumber the wheels of progress, nor altogether to displace the operation of common sense. A heavy burden is laid upon any governmental bureau which is made to act as heart and brains for the nation, in any matter, even in architecture; and wisdom is needed in the selection of the personnel of such bureau. It is possible, as has been intimated, that the burden may well be laid upon the shoulders of more than a single individual. However, it is not

the function of this paper to discuss the selection either of bureau chiefs or government commissions. It is its function to maintain that results of high beneficence to architecture and the government must and will follow upon such a happy conjunction as that of the best type of private architect with a wisely administered governmental bureau,—a bureau which merits the appellation of the architectural heart and brains of the government.

THE STRUCTURAL VALUE OF HOLLOW TILE FOR BUILDINGS*

BY E. V. JOHNSON

AS a building material, used in combination with steel beams, columns and girders, the many and varied systems of hollow tile are familiar to architects, engineers and builders, having been generally used for fire proofing purposes during the last thirty years. But as a material possessing valuable units for structural purposes, it is comparatively little known. It is to the structural value of this material for building purposes that I propose to confine my remarks, and endeavor, by views and illustrations of actual structures, to inform you, in a limited way, of the many uses to which hollow tile has been successfully and economically applied in modern requirements of buildings.

During the last five years, there has been an energetic effort made to introduce reinforced concrete as a substitute for steel in the erection of buildings; more or less success has met these efforts, concrete with reinforcing metal tension bars being used entirely for the walls, floors, girders and beams. The fact, however, that concrete of itself develops only an ultimate compressive strength of from twelve to eighteen hundred pounds per inch, necessitates a great deal of superfluous material, thus occupying increased area in the building, in order to make the columns and beams of sufficient strength to carry the superimposed loads.

I claim that we can construct any form of building, or structural part of a building, using hollow tile in compression and steel fabric and rods in tension, and the thickness and weight of the wall, and the size and weight of the material in the columns and girders, will be one-half the volume of concrete construction, and will develop double the carrying capacity. From this it will appear that hollow tile is much better adapted for the purposes above described, than reinforced concrete.

My first experience with hollow tile dates back to 1877, at which time the material had a limited use, being employed only as a filling between floor beams in the place of the then universal brick arches. No attempt was made to protect the columns or girders from the effects of fire with fire proofing material, as we assumed the iron work to be fire proof of itself. Later disastrous experiences with fires changed these views materially, and with the increase in the height of buildings has followed a thorough and comprehensive scheme of fire proofing of all structural steel members in a most careful manner.

After the tile system for floors had been built in place and been successfully tested and accepted by several leading architects, hollow tile was then employed to build light partitions, for dividing various floors into rooms; also for roofs and furring on the interior brick walls.

More or less effort was made at about this time to have this material accepted for outside walls and interior bearing walls, but the high cost price of hollow tile, together with the skepticism of the average owner and builder made it difficult to introduce hollow tile in competition with brick and stone, and for this reason, until a few years ago, the use of hollow tile as a building material, was confined almost entirely to fire proofing purposes.

Having met many reverses during my building experience on account of the lack of official technical data with which I could satisfy the doubts and misgivings of those professional men to whom new ideas had been presented, I came to the conclusion that the only way to "cross-cut" to the desired end would be to furnish our own formulas for data as to strength, fire resisting qualities, etc. With this end in view, I carried on a number of tentative experiments, and made numerous and varied tests of blocks of this material, at various testing stations in this country, both for compression and tension, to demonstrate that hollow tile could be manufactured and successfully employed as a material to carry heavy weights in the walls, floors and partitions; and also for the construction of columns and girders in combination with steel tension members. The results of these tests of single blocks of material were not conclusive to the practical builder for the reason that many of the conditions that really exist in practice were

HOLLOW TILE RESIDENCE, AT AKRON, OHIO.

absent in the test, leaving too many factors to be determined by comparative calculation.

I am pleased to state that the company, with whom I am now associated, took a broad view of this question, and is at the present time conducting, at its own expense, under my direction, a series of practical tests, at its testing station, designed especially for the purpose, at 25th and La Salle Streets, Chicago. I will exhibit, later, stereopticon views, showing this testing station, exterior and interior, together with the mammoth testing machine specially built and designed for the purpose by R. D. Wood & Company of Philadelphia.

This machine is operated by hydraulic pressure, using a thirteen inch ram, with a twelve inch stroke. The uprights are six inch square hammered steel of sufficient height to enable us to compress a section of wall three feet long and fifteen feet high, and to exert thereon an ultimate vertical strain of four hundred thousand pounds, or two hundred net tons. With the same machine, we are able to test beams twenty feet in length; also section of floors, girders, etc. Immediately adjoining the machine house, we have built a fire test kiln, to enable us to make practical demonstrations of the fire resisting qualities of all forms and materials employed by us in the building.

All tests made at this station are under the charge of engineers who have instructions to carry on the tests strictly exparte, and I am authorized by our company to state that if any doubts are expressed as to the accuracy and efficiency of such test reports as we shall from time to time publish, our company will, at its own expense, duplicate, under the personal direction of our critics, any tests made, and will guarantee that the tests, if conducted in strict accordance with our printed reports, will give practically the same results. In making these tests, we have in each case built up a section of wall, floor, column or

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*Paper read before the Chicago Architectural Club February 20, 1905; revised by the author for publication in the INLAND ARCHITECT.

girder of full size, and laid with the kind of mortar specified for the purpose, the object being to make the demonstrations as nearly as possible like the actual conditions that would exist in building practice. Having, therefore, determined by practical demonstration the units of value of hollow tile for structural purposes, I feel justified in claiming for this material great economic and structural advantages over wood, steel, brick work or concrete, for building purposes.

While I do not claim that hollow tile, as a structural material, can or will entirely displace any of the above standard materials, I do claim that when the architects and engineers become fully informed of the great compressive strength of this material, as compared with its weight, and its economic value, used in combination with steel tension members, a greatly enlarged field will be opened for its use in the erection of every character of building construction.

The stereopticon views shown you tonight will portray a modern up-to-date apartment building, constructed from the base of the foundation walls up to and including the water tank on the roof, entirely of burned hollow clay tile. In this structure, no steel columns, girders or beams are used. The exterior and interior hollow tile walls carry the hollow tile floors from story to story; the stair risers and treads are also of this material, as well as the wainscot, architraves and picture moulds. No wood was used for the floors; the finish being a composition of plaster and ground wood pulp, spread directly upon the tops of the tiles, a narrow nailing strip being run around the edge of the floors so that carpets could be easily attached. The exterior walls used for this structure are of various sizes and color of houlow tile, in combination with pressed and rock-faced brick. The supporting partitions on the interior are built of regular hollow tile, laid with the hollows vertical, and then plastered with rich plaster.

This apartment building was erected by and under the supervision of Mr. H. B. Camp, of Akron, Ohio, who has long been identified with the clay manufacturing interests. Mr. Camp has shown his faith by investing his own money in a dozen or more factory, apartment and office buildings in the State of Ohio, constructed with hollow tile in the manner described. All of his buildings have proven satisfactory and profitable investments. The floors are what are known as the Johnson long span hollow tile floors, which are fully illustrated in the views.

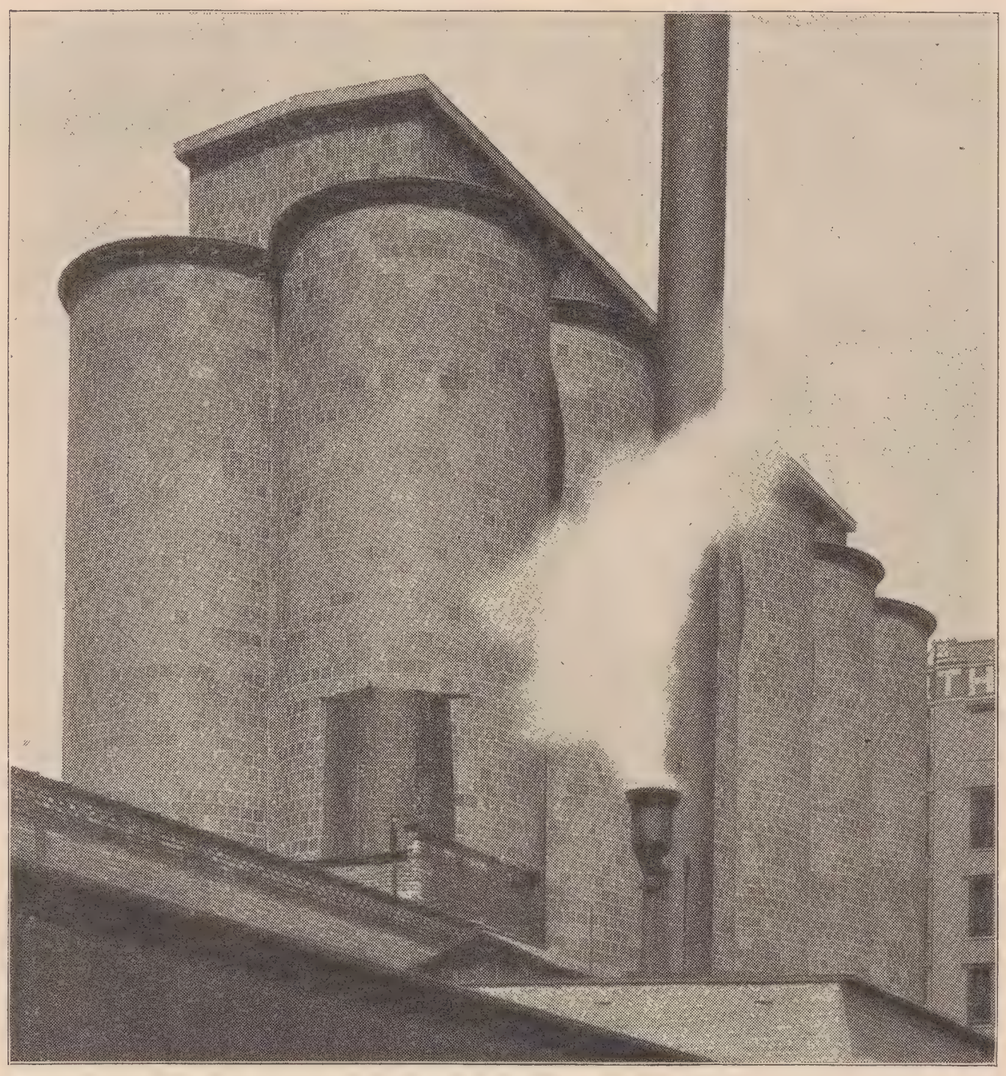
This system of floors, while not generally known in Chicago, has been used for the past five years, and with entire satisfaction, for railroad stations, hotels, apartment buildings, private residences, churches, hospitals, office buildings, etc., and there are at present five million square feet of this system erected in place.

There is an apartment building at 45th Street and Lake Avenue, Chicago, in which the floors and roof are built of eight inch tile, with a clear span of seventeen feet between beams, and supported upon the exterior brick walls. Recently, ten inch hollow tile were used to build the Johnson system floors of the Lincoln Center Church, on Oakwood Boulevard and Langley Avenue, this city. The spans on these floors, between girders, are twenty-two feet, six inches, in the clear. This work can be seen in the rough at the present time, as the building has not yet been plastered.

A new era of building has commenced. You young men, starting out on an architectural career, should take advantage of the results so far accomplished by the use of hollow tile, and study the material with a view to its use in the construction of every form of building, from the modest laborer's cottage to the twenty story skyscraper, for the entire exterior and interior construction also, as a structural substitute for wood and iron columns and girders.

I will show you a material tonight that has a compressive strength, varying from four thousand pounds to twenty-one thousand pounds per square inch! We can manufacture this material, and guarantee a uniform working compressive strength of one thousand pounds to the inch, with five factors additional for safety. You can easily figure out yourselves the thickness of wall, the sizes of tile, the thickness of shell and the weight of the material you may employ in the construction of floors, walls, columns and girders.

From the tables of strength of this material, which we will furnish from time to time, all of the data requisite to enable you to take advantage of this valuable structural material will be at hand. Why use dense, heavy material like solid masonry and concrete, when more efficient results can be obtained with a material only one-half the weight, and possessing three times more compressive strength per inch than concrete or brick work? This is especially true of high structures where the weight on steel girders, columns and foundations is of paramount importance. Why not employ hollow tile for court walls of buildings? It can be manufactured in ornamental form, and being hollow, with great compressive strength, can be built to the requisite height of any modern skyscraper.



HOLLOW TILE GRAIN ELEVATOR, AT CHICAGO

You all know that the price of wood has advanced in the last ten years fully one hundred per cent. We are today paying twenty-two dollars per thousand for the same quality of lumber that we purchased in 1895 for nine dollars and seventy-five cents per thousand. It will not be many years before the advance in the price of wood will prohibit the erection of the present cheap style of buildings, so much in evidence in apartment buildings and residences.

In 1877, there were one thousand tons of hollow tile fire proofing material sold in the entire United States. In the year 1904, there were very nearly two million tons sold. Ten years from to-day, two-thirds of all the new buildings will use hollow tile as the structural material, both interior and exterior.

I believe that hollow tile, made in suitable forms, and of assorted colors, also hollow tile, faced with brick out, or plastered on the exterior surface with ornamental stucco, is the material best adapted to take the place of wood, both for interior and exterior construction of buildings, and base this opinion upon the following claims:

1st. Tile is the lightest and strongest material for building construction.

2nd. It furnishes a perfect surface for the receipt of plastering, both old style lime mortar and patent plaster.

3rd. Can be laid at any season of the year, regardless of rain, frost, or extreme hot weather.

4th. Can be plastered upon within forty-eight hours after being laid in place.

5th. The tile, being hollow, serves as a non-conductor of heat, cold and sound, assuring a warm house in winter and cool in summer.

6th. Does not shrink, thus causing disfigurement to plastering and decorations.

7th. Being non-combustible, there is no necessity to carry insurance.

8th. It is impervious to climatic influences, and time enduring, assuring a minimum outlay for annual repairs.

If there are any disadvantages in the use of hollow tile, other than first cost, they have not made themselves apparent to me in practice. Throughout the State of Ohio, there are a great number of different classes of buildings that have been built of this material, using the standard eight inch by eight inch hollow building blocks, owners and occupants of which, when consulted, have in every case expressed themselves entirely satisfied with the material. There are large factories in almost every state of the Union engaged in the manufacture of clay products, and the selling price of this material is being decreased gradually every year. At the same time, the price of lumber is constantly on the advance, and it will only be a short time when the owners of buildings will find it to their interest, on the grounds of economy of first cost, to use hollow tile in preference to any other material. The demand for this class of construction is surely coming, and the young draughtsman of today who will be the architect of the future, will be called upon to furnish the plans and designs for the buildings.

The practical examples of structures already erected and in use eliminate the objection that may be raised on the ground that this system of construction is new or untried. It is for this reason that I have dwelt so particularly upon the results of the tests that have been made, and are now being made, so that architects may be fully informed upon the actual unit values of this material, and also the latest improvements being devised for its economic application to building construction.

To justify some of my claims as to the strength and adaptability of hollow tile for carrying enormous loads in building structures, I shall show you views of several large fire proof grain warehouses, constructed during the last five years with hollow tile. I refer especially to sixteen large isolated tile tanks, built at Minneapolis, Minnesota. These tanks are fifty feet in diameter and ninety-five feet in depth, and they each have a capacity for storing one hundred and twenty-five thousand bushels of grain. The walls of these tile tanks are constructed with two thicknesses; the inner course being composed of hollow blocks six inches thick, twelve inches square, and the exterior course being seven-eighths inch thick slab tile, secured to the inner course with metal fabric anchors. This outer course, or facing tile, is primarily for water proofing purposes, but acts at the same time as an additional fire protection to the interior tile. The two tiles, when laid together, form a wall slightly in excess of seven inches in thickness. The contents of the tile tank weigh over thirty-five hundred tons, and the walls themselves have to support an actual live load of ten tons per lineal foot.

The drawings, illustrated later, will explain to you clearly just how these tile tanks are constructed, showing the method of applying the steel bands to provide the necessary tensional strength to resist the thrust, and also the form of tile used in combination with the steel tension members. I spent five years trying to induce several prominent engineers to investigate this system of construction and pass upon its safety. Three prominent eastern engineers turned down the idea to their clients as dangerous and impractical.

Failing, therefore, to receive the technical support of talent, together with my associates, we erected an experimental tile bin in the city of Minneapolis. After this tile tank was completed and filled with twenty thousand bushels of grain, and allowed to stand six months, we were able to secure a contract for the erection of our system, upon personal guarantee of its efficiency, and since the first tile tank was erected in 1900, we have contracted for and erected, in different parts of the country, over seven hundred bins, with size varying from fourteen feet in diameter to fifty feet in diameter.

From the showing of great strength as developed by the seven inch wall for the grain bins above described, I consider my case proven, when I state that there is no building material, built in the form of masonry, that will develop even one-half the compressive strength, compared with the weight of the material, as properly designed hollow tile, and this is shown by the actual results obtained in the construction of tile tanks for grain storage.

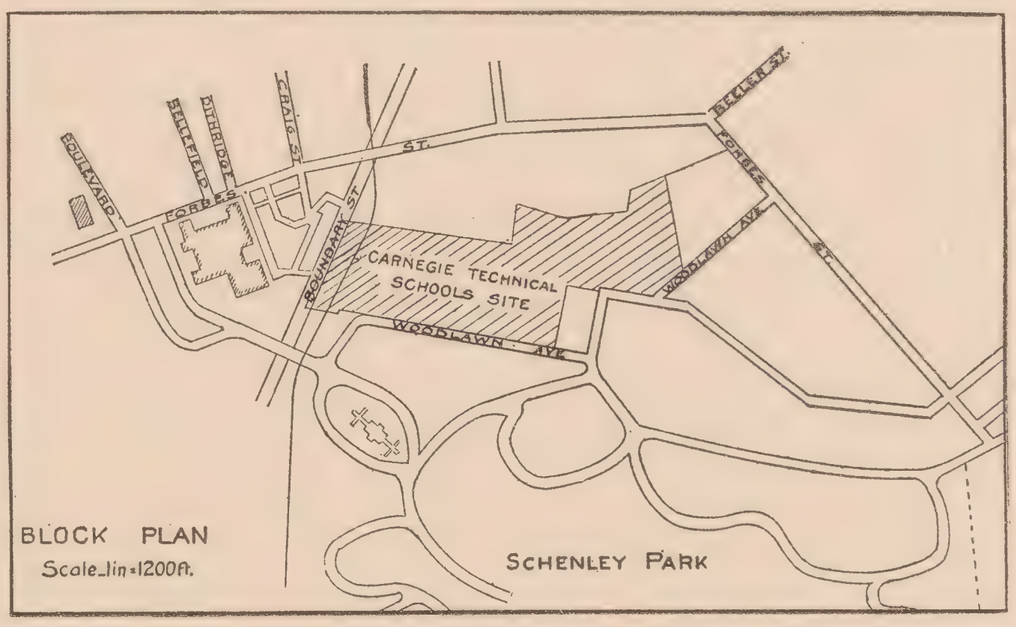
THE CARNEGIE TECHNICAL SCHOOLS COMPETITION

THE competition for the Carnegie Technical Schools of Pittsburgh has been won by Messrs. Palmer & Hornbostel of New York, second place going to Mr. George B. Post, one of the especially invited and paid competitors; and third, fourth and fifth places, each conveying an award of one thousand dollars to Messrs. Wood, Donn & Deming, with Corbett & Pell Associated (Washington and New York); Cram, Goodhue & Ferguson (Boston and New York); and Newman and Harris (Philadelphia) respectively. The highest rank among Allegheny County Architects, to whom was assured an award of one thousand dollars, was taken by Mr. T. E. Billquist of Pittsburgh.

In making its decision, the Committee followed the recommendations of its adviser, Professor Warren P. Laird, of the University of Pennsylvania.

The competition was restricted to architects whose ability to execute large work had been approved in advance by the Committee, and this, together with the fact that five leading architects were especially invited as paid competitors, brought into the competition a very large number of men of the highest attainments and professional standing. This, in spite of the unusually difficult nature of the problem, has had the result of producing, among the forty-four designs submitted, a very large proportion of fine compositions.

Five architects and architectural firms accepted the invitation of the Committee to submit designs in the competition, for which service they were paid one thousand dollars each. They were Messrs. Carrere & Hastings, New York; Frank Miles Day and Brothers, Philadelphia; Cass Gilbert, New York; Howells & Stokes, New York; and George B. Post, New York.



The programme, of which the block plan is shown, called for drawings at sixty-fourth scale, including a block plan, a landscape perspective, drawn in black ink and floor plans of the principal buildings and other details. A printed or typewritten statement describing features not clearly shown in the drawings was permitted and no competitor was allowed to show more than one design, and no models. No cypher or nom de plume or other identifying mark on the

drawing or the wrapper, save within the sealed envelope. Designs were not mounted but rolled.

The adviser first examined the several rolls and rejected those which did not conform to these restrictions and then chose from the remainder that which seemed to give promise of the best result when studied and developed, taking into consideration the evident professional and artistic capacity of its author for dealing with the problem from all points of view.

This constituted the report of the adviser to the committee who with the adviser examined all the designs and having marked as prearranged that design considered best, the envelope having its number was opened and the successful architect appointed. The architect appointed is to "receive compensation in accordance with the usual professional practice."

The work directly agreed upon is the principal portions of the administration and other portions of other groups at present determined upon. The premium paid, it was stipulated, should constitute a payment on account of his services as architect of the buildings. It was specified that all drawings should remain the property of the architect as instruments of service.

The group of buildings called the Carnegie Technical Schools will consist of an administrative group, school of applied science (in which shop work, labratory and drafting rooms will be included and thoroughly equipped with modern machinery and appliances), the school for apprentices and journeymen (which will include the education of those mechanics in the building and manufacturing trades who are already rated as journeymen, which will ensure their advancement to higher positions), technical school for women (with courses in two, a longer and shorter grade), and a school of applied design.

The site occupies thirty-two acres and the enterprise will be erected, equipped and endowed by Andrew Carnegie, under the trusteeship of the trustees of the Carnegie Institute of Pittsburgh.

REINFORCED CONCRETE*

BY C. A. P. TURNER, M. AM. SOC., C. E.

THE industry and enterprise of the American Portland cement manufacturer has now placed at the disposal of the enterprising engineer or builder, a thoroughly reliable material when properly handled which bids fair to replace timber and structural steel in buildings and short span bridges.

In making this statement the writer will say frankly that the view expressed is the result of eighteen years practical experience in building and structural work, as draughtsman, contractor and designing engineer. For the past ten years the writer has followed closely each and every structure in concrete steel that came to his attention, but it has been only of late that he has been in position to place the result of his study in the form of reinforced concrete structures, which later will be illustrated.

In treating the subject from the popular standpoint, the writer would first say a few words as to the reliability of the construction as compared with steel or timber. Ignorant abuse will render dangerous the best material which the engineer uses—for example, some months ago the writer was called on to inspect some coupler pockets forged out of 1¼ x 4 in, bars made by a Pittsburg firm. They were worthless, the writer was told; and going to the pile and selecting four, they were placed on the ground and struck a few sharp blows with a sledge, a single blow fractured 10 square inches of metal in two cases. In normal condition this area would carry 600,000 lbs. intension. Taking the shank to a steam hammer, the center was bent flat on itself without fracture proving that the smith had burned the steel in forging, until it was worthless at the bend.

Similar inexcusable ignorance in working concrete will likewise result in inferior work, but by no means to such an extent as that instanced in the case of the steel.

The mistake that is made by many in fabricating reinforced concrete is the endeavor to get strength with a cheap concrete. A common proportion is 1 cement, 3 sand, 5 stone—a mixture much too poor to secure the best results, or the greatest strength for a minimum cost. A mixture of 1 cement to 2 of sand and 2 broken stone, of size from a pea to that which will pass a three-quarter inch screen, is to be preferred. The stone should be screened, if limestone, otherwise the dust such as that of trap rock or granite may be used in lieu of sand. By making this mixture wet enough to flow slowly and require no tamping whatever, the question of poor workmanship where the material is mixed by machine in exact proportions is entirely eliminated; any laborer you may employ who can dump the car and level off the cement will do as good work as can be done.

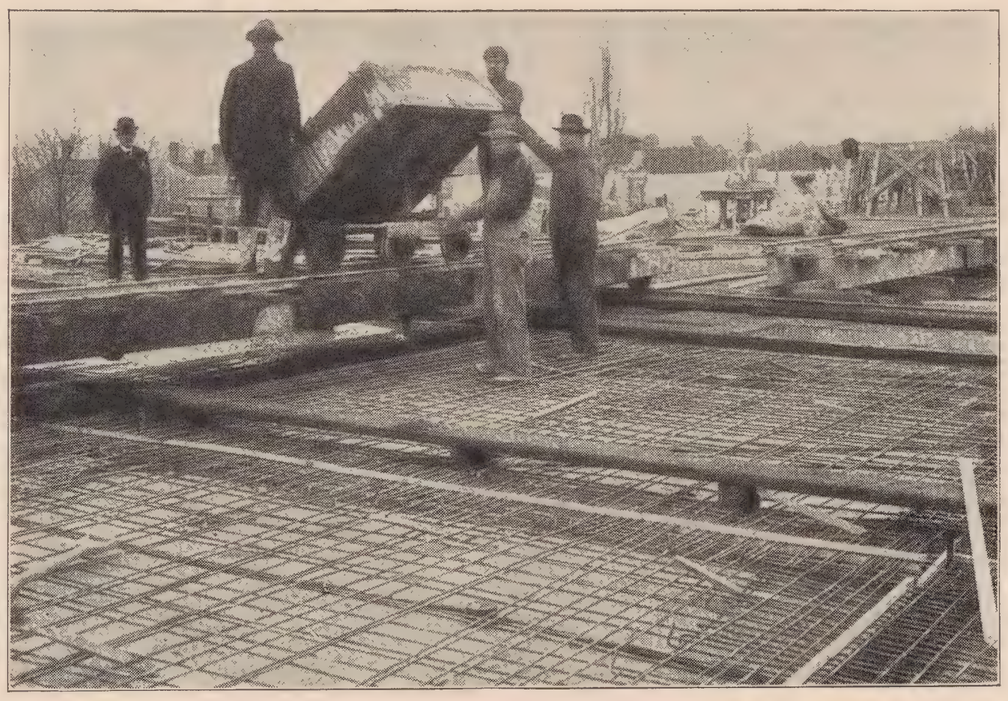
Such concrete three months old should give a value in compression of 2500 lbs. per inch, or more, without reinforcement. In the form of a column, if constrained laterally, Considere has shown that this crushing strength can be increased five fold or more, dependent on the reinforcement.

The principle of this reinforcement is:—If we take a light sheet metal cylinder and fill the same with sand, the cylinder will support a load on the sand much greater than it would empty, since the metal is in tension and the filling with the lateral restraint carries the load.

Now were the metal shell square, evidently the sides of the shell would bulge sidewise under the internal pressure —similarly any attempt to hoop a reinforced column with a square hoop is an amusing absurdity, the slightest lateral bending removing the necessary restraint.

At first thought it might seem that a continuous cylindrical shell would be the best means of reinforcement, but the vertical metal being more rigid than the concrete, would be strained to its limit before being brought into action in its capacity of lateral reinforcement, hence the undesirability of attempting to make the vertical reinforcement used continuous, i. e.— without some concrete between ends where this principle is to be employed, or making the reinforcement in form of a spiral coil as recommended by Considere.

The criticism that may be urged against some of these forms of reinforcement appears to the writer to lie in the failure to make a good connection to the beams. For that



VIEW SHOWING JOINING OF CONCRETE

reason the reinforcement advocated by him is in the form of a grill of vertical rods banded at intervals by strong riveted hoops with one of the rods bent outward into each beam, connected to and supported by the column, and the whole wrapped or hooped with netting.

As in this country the use of concrete construction is in its earlier stages, it is not surprising, perhaps, that many of its advocates are imitating the methods of framing required for construction in entirely different materials, rather than forms and proportions peculiarly adapted to reinforced concrete. Mr. Humphreys in his excellent talk yesterday emphasized in connection with bridges the effort to bury a structural steel frame of sufficient strength for the

*Paper read before the Northwest Concrete Products Convention at Minneapolis January 24, 1905.

load in concrete and term the clumsy conglomeration, reinforced concrete.

In the structural line we have attempts to reinforce structural steel with concrete, to put in beams as thick as required for the old fashioned wood framing, attempts to reinforce in one direction only, forgetting that in a monolithic mass of the size with which we are dealing, temperature stresses must be provided for in the reinforcement of the work so as to make it stand without cracking.

In designing reinforcement of beams, advantage should be taken of the principle of continuity, since with the constant section we have to provide only for 2-3 the moment of a simple beam and we have but one-fifth of the deflection, for the beam fixed at both ends that we would have for a simple beam.

This system of design calls for the major section of the metal for flange reinforcement over the support and furnishes ample provision for shear.

In constructing work in this line it is well to bear in mind that centering is a considerable item and that each additional beam is an extra expense. While we may not discard beams for heavy work, for light loads, such as two to four hundred pounds per square foot, we may make a simple slab from column to column spacing 16 to 16 ft., running main lines of reinforcement from column to column directly and transversely with lighter fabric between these lines, all buried in a slab of uniform thickness.

A few words regarding the interesting peculiarities of reinforced concrete. We will shortly illustrate a panel which under 82 tons load showed absolutely no deflection whatever. Now the materials with which we deal in engineering work are elastic, why then such deportment of these beams? In setting up, the concrete shrinks and the rods reinforcing the bottom of the beam are actually in compression, also the top of the beam in tension due to internal stress. Until this condition is counterbalanced we can expect no elastic deformation. This feature of the deportment of reinforced concrete is worthy of serious consideration by those who contemplate using shapes of irregular form as reinforcing members.

In crushing concrete usually shears at an angle approximately forty-five degrees to the direction of pressure, hence plain reinforcement, either parallel or at right angles to the line of pressure has a marked influence on its strength.

To return to the more popular phases of the question of reinforced concrete: Can it be figured with accuracy? And do we know enough about it to use it with safety? The answer is emphatically in the affirmative. The engineer can figure the strength with the same degree of precision, certainly, that he can timber construction; while if the tensile value of the concrete is disregarded as is in good practice, the error is invariably on the side of safety.

How does reinforced concrete compare in cost with older styles of construction? For heavy buildings we can compete with wood when the working load is 500 lbs. per square foot or more.

For lighter loads we can compete at a good profit with any of the older forms of fireproof construction, saving the owner the cost of the entire steel skeleton.

For loads greater than 800 lbs. per square foot it is cheaper than timber if both are made of equal strength.

At the Paris Exposition the Hennebique Company erected a cement concrete building in which to test both the strength of the floors and their resistence to fire when loaded. The first floor was loaded to three thousand pounds per square yard. The upper floor to two thousand pounds. The deflection was barely one twenty-fifth of an inch. A big fire of cord wood and oil was started on lower floors and kept at full intensity for an hour, and although the heat developed was 1800 degrees Fahr., the temperature on the floor above the fire only increased about four degrees, showing that merchandise would not have been injured in such a position. At the end of an hour the deflection of the heated ceiling had increased to one-half inch. Then the whole building was drenched with water, and two hours later the load was removed, whereupon a rise of one-half inch took place, showing no permanent deflection or injury to the construction.

The construction of reinforced concrete is supposed by many to be slow business, while as a matter of fact in no system of construction can the materials be as promptly obtained or the work more rapidly pushed. The cement and rods can be obtained, if necessary, at a week's notice and the rough timber for forms is a stock proposition. A single half yard mixer and suitable crew can readily erect a building with floors of 16,000 square feet area, including columns and beams, in a week's time with fair weather.

To the contractor who has vainly tried in our cold climate in winter to conglomerate 16 parts of frozen sand and gravel with one part of cement—plus ice water—and produce smooth concrete work, the idea of putting in satisfactory reinforced concrete in winter seems an impossibility. He is respectfully referred to the paper of W. A. Rogers, read before the Western Society of Engineers, who concludes from the tests that exposing freshly mixed Portland cement to a freezing temperature seems to affect its rate of hardening, making it slower, but eventually the concrete will be just as good as if it had not been exposed to the cold—a conclusion in accord with the writer's experience.

VIEW SHOWING INTERIOR FINISH

The question is frequently asked: Will reinforced concrete stand the test of time? Will it or will it not crack or weaken? Buildings built by Hennebique have been in use for twenty years and are claimed to be stronger today than when first built.

As the object of this convention is the promotion of the cement industry, a few notes on experience in promotion of a few concrete constructions may be of interest.

We call on our friend, the outspoken, honest, old fashioned architect and inquire if we may be favored with an opportunity to figure on his elegant five story warehouse. Well, he hadn't considered concrete—but what size would you make the columns? Fourteen to eighteen inches square as you prefer, you reply.

He glances at you curiously, apparently to see whether you have a few loose gears sticking through the epidermis covering your thinking machine, and wants to know, "whether you concrete men are plumb crazy!"

You next see an owner, and after getting him interested and convinced of the merits of your construction and your ability to give a bond for the full amount of the contract, he takes advice of some contractor, who with absolutely no experience in this line wisely advises him that the work could not possibly be executed at this season in cement in order to carry out the work himself in wood—and so it goes.

This talk was followed by stereopticon views of first, the seventeen story Ingalls Building, of Cincinnati, a building constructed throughout of reinforced concrete on the Ransom system—a structure all concrete men can well

take pride in. Following this view were a large number of illustrations of the lecturer's system of construction, some of the views being produced herewith.

ARTIST AND ARTISAN*

IN a most interesting address, delivered many years ago, upon the subject of the relation between the artist and the artisan, the late Cardinal Wiseman drew a graphic picture of the difference between the industrial art of former times and the dilettanteism of to-day. As an apt illustration he described the entrance of an old Roman householder into one of the modern museums of antiquities and curios, and depicted him ordering the various articles to be put back to their proper uses. Vases, urns, and other vessels of most artistic form and ornament, he promptly sent to the kitchen, for which they were intended.

A rare mosaic pavement, which the modern lover of art had protected with a heavy railing, was relaid in the entrance way, to be trodden under foot by every passing slave, and so in turn each rare and beautiful object of art was dismissed to some office of service in which its artistic side was made secondary to its useful function, and the empty show-cases were thrown aside as useless.

THE lesson which the wise cardinal sought to teach has not been altogether lost in these latter days of household art, and in the new renaissance of true artistic taste, the union of artist and artisan and the combination of the beautiful with the useful are once more seen.

In a new country like our own, the growth of taste in household art and the appreciation of the right use of art work come only with increase of leisure and the relaxation from daily business; but, as the influence of culture, art, and travel grows daily more powerful, so the great tide of public sentiment follows the lead which only a brief time before seemed far in advance.

Instead of looking only to art galleries and public collections for examples of art work, and being content with an occasional glimpse of some rare bronze or exquisite forging through the panels of a cabinet, the American connoisseur demands not only posession, but also the daily use of articles which a few years ago would have been cherished in some museum of fine arts.

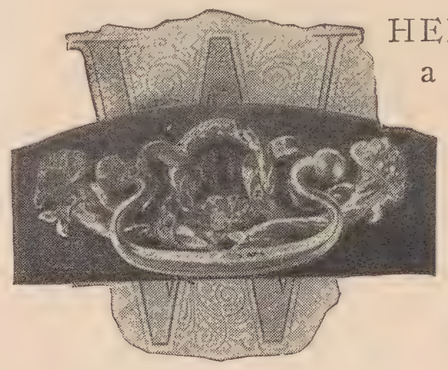
This is true especially of the great and constantly increasing field of art which includes all forms of metal work used in household decoration. The modern collector of the works of the modern artisan makes his house the cabinet in which these works are placed, and, instead of keeping them under glass in an art gallery, he puts them to their rightful use, to be seen and handled by all who come and go.

The entrance door of his residence bears an escutcheon plate which is itself a gem of art work in a precious metal or fine bronze, while the strong yet graceful hinge-straps are examples at the same time of artistic design and skilled interpretation.

Passing on through the inner door, in which a wrought grille of exquisite tracery is set, we notice the fitness with which all the metal is chosen to accord with the surroundings. The elaborate detail borne by the escutcheon plate of the outer door is in perfect harmony with the ornate renaissance work upon the capitals and cornice above, while within the same motive is modified in treatment and finish to harmonize with the altered conditions. Passing from room to room, the evidence of artistic taste is apparent, and, without ever becoming obtrusive, the metal work is everywhere seen to assert its rightful position as a fitting subject for treatment at once appropriate and beautiful.

Is this the palace of a prince, or the home of a millionaire, through which we have so hurriedly glanced? It is indeed a house beautiful, but there are many other such of equal beauty and yet not of extravagant appearance. If such examples of the metal-worker's art can be so freely distributed, there must be some readier way of procuring them than the method which gave existence to the art work of the older days. Only king or pontiff could command the skill of a Benvenuto Cellini to form the mould and handle the graver and chasing tools, and here is work which compares with that of the old times, on the doors and windows of residences and hotels, churches and business-blocks, far exceeding in variety and quantity the possible results of individual labor and skill. At the same time, the art metal work is in appearance and character so far above the so-called manufactured articles that no comparison is to be made.

Yet, if organized production under skillful supervision, with all the great advantages which accompany the facilities for making, handling, and display possessed by organization, constitute manufacturing, these products of the highest artistic merit are manufactured; and it is the result of a system of manufacture which retains the individualism of the artist, and adds to it the productive capacity of a thousand artisans, which makes the use of modern art metal work a household possibility.



WHEN the householder of today seeks a new home, he calls to him the architect to prepare plans and elevations, and to put into practical form for construction the ideas which he has in mind, and also to guide by counsel and experience the plans which he hopes to see realized in the completed buildings.

It is in this work that the client and architect may, if they will, find most pleasing and congenial employment, and the pleasure of witnessing the realization of the long-studied plans in the home where perhaps many coming years are to be spent.

In all this work, the interest increases as the house ap-

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*An article written by Mr. Henry Harrison Suplee, originally printed in brochure form, and forming part of "A treatise on Locks and Builders' Hardware," by Henry R. Towne, president of the Yale & Towne Mfg. Co., and past president of the American Society of Mechanical Engineers. John Wiley & Sons, publishers. Price $3.00. It is the intention of the publishers of the INLAND ARCHITECT to publish other selections from this work. The book is profusely illustrated and contains more than 1100 pages, 4 x 6½ inches.

proaches completion, and not the least interesting portion of the work is the selection of the metal trimmings and ornament. In this branch of the decoration of the house, the new order of treatment is a revelation to many, and often the client, from lack of information, fails to profit by what has already been done by specialists in art metal work.

(To be continued)

OBITUARY

MAXIMILIAN MAUCH.

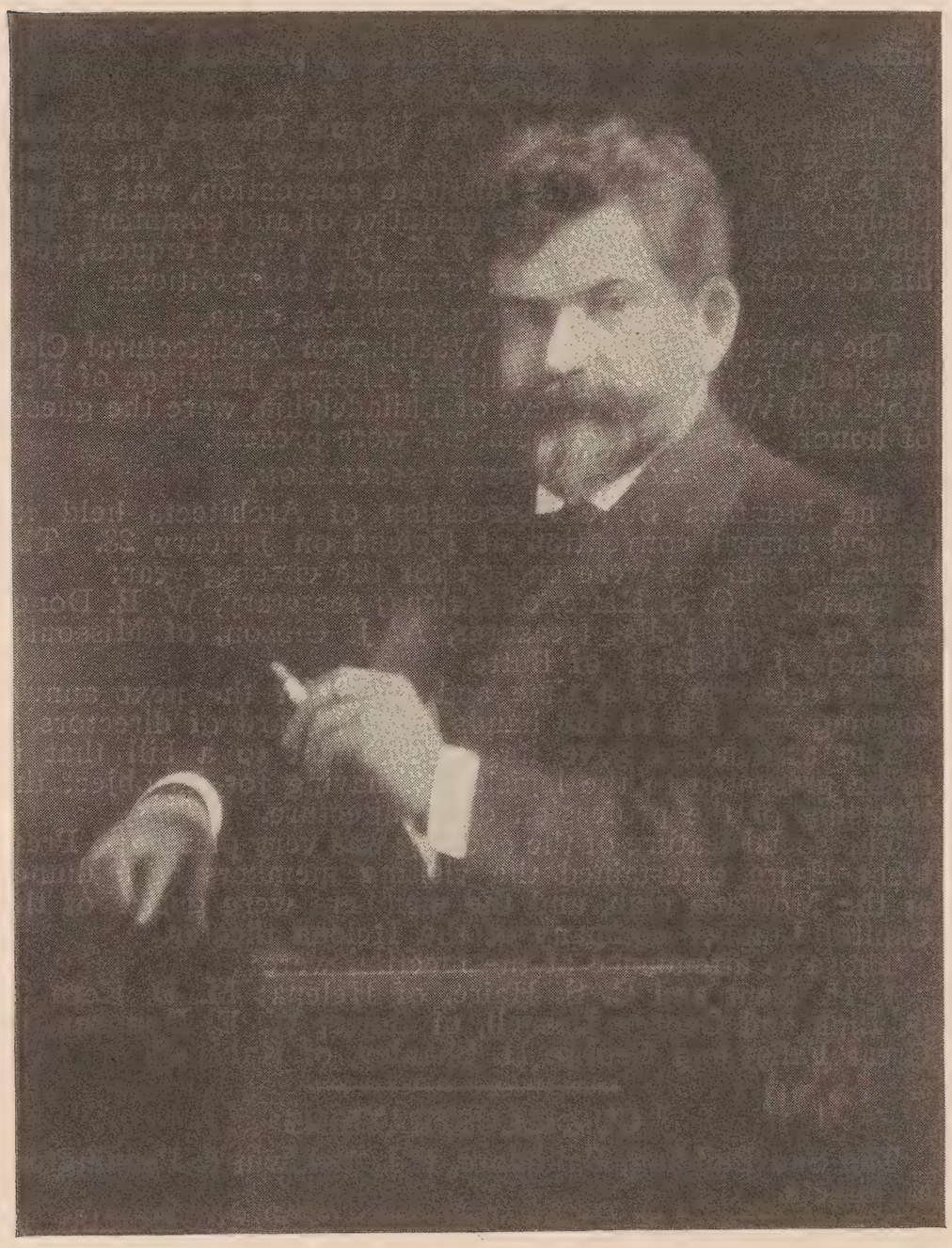
By the death of Maximilian Mauch, sculptor, from appendicitis, in the Augustina Hospital February 13th, there was removed from the art world of Chicago one of its most interesting and most useful members.

He was a man of ideas and of action. He was an idealist with dreams for the future beauty and splendor of his adopted home, and at the same time he was practical in his business.

As his work in Chicago was largely in the line of architectural sculpture, he had extended relations with two professions.

He was a member of the Chicago Architectural club and served on its executive committee and took an active part in the affairs of the Chicago Socety of Artsts, and Palette and Chisel club, and was also a member of the Municipal Art League, the German Technical Society, "Schlarofia" and Savage clubs.

In 1902, together with Robert J. Thompson and Edgar Cameron, he organized the Municipal Art League of Chicago, on a basis so liberal that its membership could not be confined to those interested in municipal art, with the result that after a few spasmodic attempts to suppress smoke and bill boards the society has become a catspaw for other organizations.



MAXIMILIAN MAUCH, SCULPTOR

Mr. Mauch was affiliated, by heredity as well as by inclination, to the profession of architecture. His grandfather was the famous Mathias von Mauch, and his father was an architect and engineer who was employed by the Austrian authorities on the construction of the railroad from Trieste to Fiume during the Austrian occupation of Venita. It was thus that young Mauch who was born in Vienna in 1863 came to pass his school days in Italy.

He entered the Vienna Academy of Fine Arts under Prof. Carl Kundmann in 1880 and remained there until 1890.

In 1891 he came to America and after a short time became the assistant of Karl Bitter, who was his former classmate, on the sculpture for the Administration Building at the Chicago World's Fair. After the World's Fair he became associated first with Arthur Herz and Carl Brandt in an architect-sculptor and painter combination, and later with Carl Beil he formed the partnership in the architectural sculpture business which was dissolved by his death. Many of the most prominent buildings in Chicago are ornamented with the work of his hands.

Together with Carl Beil he undertook important work for the Nashville, Paris, Buffalo and St. Louis Expositions.

For St. Louis he executed a heroic figure of Gobelin for whom the tapestry industry near Paris is named, and a group "Progress welcoming Theory and Practice" for the pediment over the main entrance to Machinery Hall.

Numerous portrait busts and a figure entitled "Sedition," shown at the National Sculptor Society Exhibition in New York, at the Philadelphia Academy and at the Chicago Art Institute, are his best known exhibition works.

The loss is not alone to the art world and the city and country of his adoption, but to those whose privilege it was to know him well. He was public spirited and possessed initiative and perseverance. He combated principles which he believed to be false, but his arguments were always friendly and he was liked by his opponents as well as by his supporters. In fact it was this quality of attraction, the attraction of intellect and a broad love for all those who came within the scope of his art, that was his most marked characteristic. He never spoke unkindly of any one and the interesting and logical view point held his auditors as long as it pleased him to talk, for there was always a thought, bright, unique, independent, underlying his most casual remarks. The effect of his life will be more largely recorded in the work of other men whom he taught to think clearly and rightly than upon the executed works of his own hands.

DONALD C. SCOFIELD.

The members of the profession throughout the United States will learn with exceptional regret and sympathy, the death of Donald C. Scofield, the son of architect Levi T. Scofield, of Cleveland, Ohio, who was killed in a train wreck, enroute to Washington together with the Engineer Battalion, of Cleveland, of which he was lieutenant. As Mr. Scofield, Senior had won an enviable war record as captain of artillery in the Civil War before he entered the profession and became through years of work and association endeared to all of the older members of the profession, so his son Donald gave much of his time to military pursuits before he became actively engaged in architecture in partnership with his father.

The battalion of engineers of which Donald C. Scofield was a member has held an enviable place among military organizations, its members being much more than inexperienced militia, as it was organized from those formerly connected with the Cleveland Grays, who entered the regular service for the Spanish war as members of the 10th Ohio Volunteer Infantry. After this regiment was mustered out Mr. Scofield saw service in the Philippines and returning rejoined his organization and at the time of his fatal trip with the battalion to attend the inauguration of President Roosevelt at Washington, was rapidly rising in his chosen profession.

It is with sorrow we extend to his father the sympathy of the profession in that bereavement that can only be felt by those who have achieved honor and, just as those successes are being passed on to a talented and beloved son, see them thus suddenly snatched away.

A MUNICIPAL MUSEUM AT CHICAGO

A MUNICIPAL MUSEUM was opened in the Public Library building at Chicago on February 23, which should have considerable influence upon the future aesthetic and commercial growth of the city. Through the enterprise of a few public spirited citizens there has been gathered in several spacious rooms, illustrated by photograph and topographical map, examples of what other cities, largely in Europe, have done to make their commercial aspect take on symmetrical lines and color that is pleasing to the eye and forms that give convenience to commerce both inland and marine. There is spread before the observer in one form or another all the needs and also the possibilities that confront and are possible of accomplishment in Chicago. It seems incongruous to call this collection a museum when it should not only be called but be in fact preliminary sketches of what Chicago will do to relieve herself of its provincialism and conditions which check and may destroy its growth.

The exhibits which are now fragmentary and general, it is promised will be changed from time to time to show individual works of a public character already accomplished and others that may be projected. This may be as far as its projectors can hope to go; but in planning a house, a panel for the hall way, or a stairway to the second floor, a fire place and a niche for statuary, is not considered sufficient. Why should it be considered so in the rebuilding of a city to suit phenominal growth and new conditions?

What must be done and done without delay or lay the present trustees of the public weal under the lasting condemnation of the next generation is to form a complete plan,

place it in the halls of the public library as a permanent exhibit and work to that plan.

When viewing in this municipal museum the topographical map of the harbor at Copenhagen, how quickly the mind realizes that Chicago must build docks in the lake or forever lose its commerce; or photographs of the broad avenues and carefully graded streets of Paris or Berlin, and not realize that the beauties of the city must be forever lost unless some permanent plan be adopted and adhered to in the construction of streets and buildings. Those who established this museum did so because frequent visits to the cities of Europe showed them that their city's trend of thought and action is provincial even to the point of municipal suicide and in its establishment they have at least relieved themselves of the charge of seeing and passing by on the other side. But they have not finished their work. Their next labor is to find some one great enough to design and a power persuasive enough to secure the adoption of a comprehensive plan in which all the fullest needs of the city will be met and joined in a practical and esthestic manner worthy of the city and the country at large.

THE REPUBLIC BUILDING

THE Republic Building as designed by Holabird & Roche, architects, and constructed by Wells Bros. Company, General Contractors, has features in advance of the other modern commercial buildings in Chicago, which are the fulfillment of the carefully considered and long cherished plans of the owner, Mr. Henry Strong, and his son, Mr. Gordon Strong.

The building is constructed upon concrete caisson foundations carried to solid rock, is of a steel frame, 12 stories in height, heavily fireproofed and finished on the outside with the best of white enameled terra cotta manufactured by the Northwestern Terra Cotta Company, Chicago. The interior trim of the building is mahogany, with white marble for the floors of the corridors, and with most modern solid porcelain fixtures throughout.

To provide satisfactory location for the smaller retailing merchants on State street and give them the same chance of displaying their goods which is so valuable upon the store floor, the third, fourth and fifth floors of the Republic Building have been constructed entirely to this end.

These floors have been subdivided and arranged for upstairs retailers, consisting of a series of shops, with regular show windows and plate glass doors opening upon marble paved corridors of the width of a sidewalk.

The ceilings are thirteen feet high; the windows are as large as it is possible to make them; there is a large court in the rear lined with white enameled brick; and these three floors are undoubtedly the lightest in Chicago of any of a corresponding elevation. The elevator service is unusually ample, the elevators being run rather on the department store than the office type, six passenger and one freight. They have been built with a special view to their attractiveness for women shoppers.

These small stores, though off the street, have been taken very rapidly by firms that have never been considered as other than first floor tenants, and this fact may be considered in the new buildings that will undoubtedly follow this same arrangement upon this or other thoroughfares.

ASSOCIATION NOTES

DETROIT ARCHITECTURAL CLUB.

The regular monthly meeting of the Detroit Architectural club was held Feb. 6.

A very interesting talk by Mrs. Christian Leidich on "A Trip Through Italy" was listened to by the club. A report from the class committee showed the club conducting three very successful classes, one in architectural rendering, on Saturday afternoons; one in charcoal rendering, on Wednesday evenings, and one in perspective, on Friday evenings. The classes have an enrollment of twenty-seven.

The secretary's report was well received, showing an increase in membership and eleven applications posted for membership.

CHICAGO ARCHITECTURAL CLUB.

A large and representative gathering of members of the Chicago Architectural club on February 13 listened to a paper by Louis H. Sullivan, on "Natural Thinking, a Study in Democracy."

Mr. Sullivan stated that his paper consisted of abstracts from a much longer composition, practically a book of 40,000 words, and in the time allowed but those features which introduced the general argument and those abstracts which bore most directly upon the architect and his art could be read.

It would not be fair to compare Mr. Sullivan's paper with other writings though it might, in its application of philosophy and art to world-wide economic conditions, be likened to a combination of Rosseau and Ruskin. It is the strongest and most far-reaching paper Mr. Sullivan has yet written and if published in book form will become a classic in American thought, not alone in its application to art but in its broad democracy.

The structural qualities and uses of hollow tile were explained in a comprehensive and exceedingly interesting paper and illustrated by an exceptionally fine set of lantern slides, by Mr. E. V. Johnson of Chicago, at the weekly meeting of the Chicago Architectural club on February 20.

On February 23, Mr. Alfred H. Granger read a paper before the club on "A Plea for Beauty in Architecture." Mr. Granger was welcomed by a large and enthusiactic audience and his remarks seemed thoroughly appreciated.

The eighteenth annual exhibition of the Chicago Architectural Club will be held in the fireproof galleries of the Art Institute, Chicago, from March 30 to April 19 inclusive. Exhibits will be received up to March 10 and the opening reception will be held Thursday evening, March 30. Arrangements have been made for collection and shipment at Boston, New York and Philadelphia.

BROOKLYN CHAPTER A. I. A.

The Brooklyn Chapter of the American Institute of Architects will hold its fifth annual exhibition at the Pouch Gallery, Clinton Avenue, Brooklyn, April 7 to 22. Exhibits of drawings, photographs, sculpture and objects of industrial art are desired from all interested. Detailed information will be sent to intending exhibitors on application to Mr. W. A. Parfitt, Secretary of the Exhibition Committee, 26 Court St., Brooklyn. Drawings for illustration in the catalogue should be sent to Mr. Henry Clay Carrel, 1123 Broadway, New York City.

The Chapter will give a dinner on the evening of April 8th, and a ladies' reception on the 10th. The Exhibition will be open to the public free from the 11th to the 22nd, and a number of special occasions are being planned.

ILLINOIS CHAPTER A. I. A.

The monthly meeting of the Illinois Chapter American Institute of Architects was held February 20. The report of P. B. Wight upon the Institute convention, was a particularly able and interesting narrative of and comment upon the convention proceedings. I. K. Pond, upon request, read his convention paper upon government competitions.

WASHINGTON ARCHICTECTURAL CLUB.

The annual dinner of the Washington Architectural Club was held February 14. Architects Thomas Hastings of New York and William L. Prieve of Philadelphia, were the guests of honor. About forty members were present.

MONTANA STATE ASSOCIATION.

The Montana State Association of Architects held its second annual convention at Helena on January 28. The following officers were chosen for the ensuing year:

President, C. S. Haire, of Helena; secretary, W. E. Donovan, of Great Falls; treasurer, A. J. Gibson, of Missoula; director, J. G. Link, of Butte.

The selection of a time and place for the next annual meeting was left in the hands of the board of directors.

The association gave its endorsement to a bill that is to be presented to the legislature, having for its object the licensing of the profession of architecture.

The social feature of the evening was very pleasant. President Haire entertained the visiting members at a dinner at the Montana club, and the members were guests of the Capitol Lumber company at the Helena theater.

Those in attendance at the meeting were:

J. H. Kent and C. S. Haire, of Helena; M. D. Kern, J. G. Link and George Desnell, of Butte; W. E. Donovan, of Great Falls; and George H. Shanley, of Kalispell.

OUR ILLUSTRATIONS

The Sun Building, Baltimore, Md., Baldwin & Pennington, architects.

The White Apartment Building, Chicago; Horatio R. Wilson, architect.

Interior view, Second National Bank, Winona, Minn.; Nimmons & Fellows, architects, Chicago.

U. S. Government Building, Lewis and Clark Centennial Exposition, Portland, Ore.; James Knox Taylor, supervising architect.

Competition designs for the Carnegie Technical Schools at Pittsburg, submitted by the following architects: Palmer & Hornbostel, Geo. B. Post & Sons, Carrere & Hastings, Howells & Stokes.

SPECIAL PLATES.

House, Lake Forest, Ill. Arthur Heun, architect, Chicago.

House, Lake Forest, Ill. Arthur Heun, architect, Chicago.

The Republic Office Building, Chicago. Holabird & Roche, architects.

Carnegie Library, Wilmettte, Ill. Claude & Starck, architects, Madison, Wis.

Second National Bank Building, Winona, Minn. Nimmons & Fellows, architects, Chicago.

Orchestra Hall, Chicago. D. H. Burnham & Co., architects. An exterior and two interior views are given.

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H. L. ROWE, Architect,
Lexington, Ky.

DRAFTSMEN WANTED

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GEO. D. MASON, Architect,
Detroit, Michigan.

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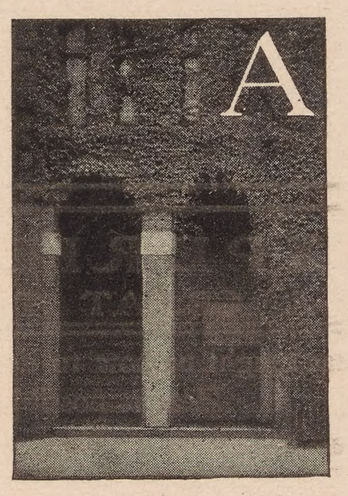

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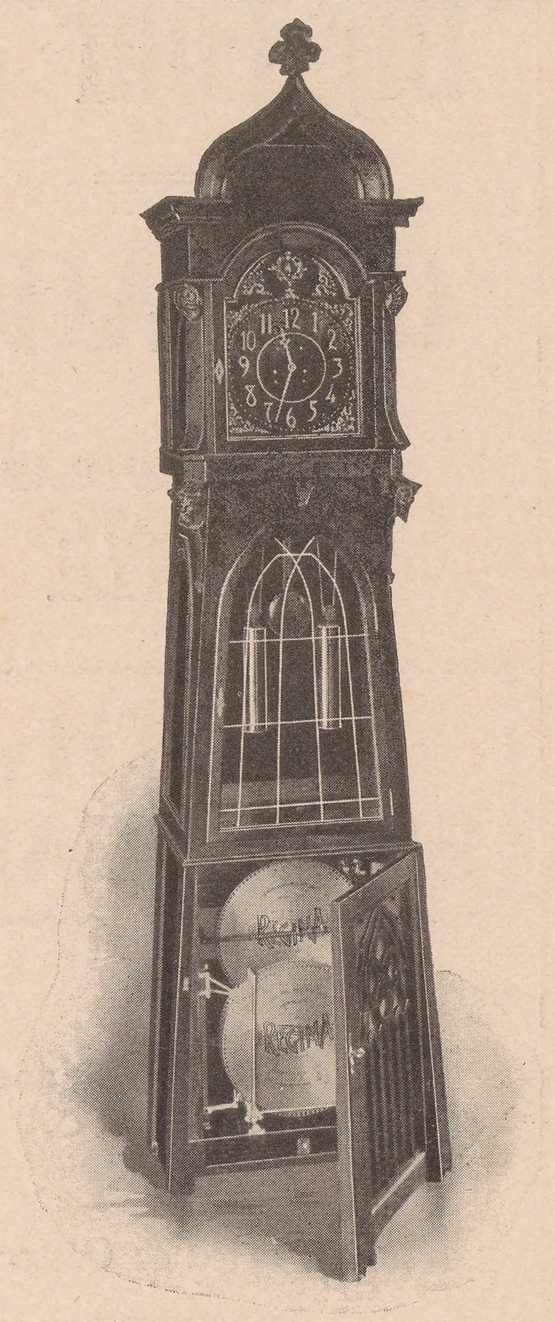

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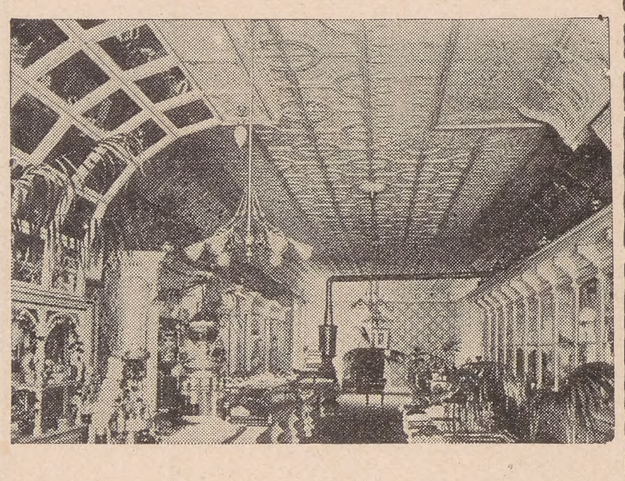

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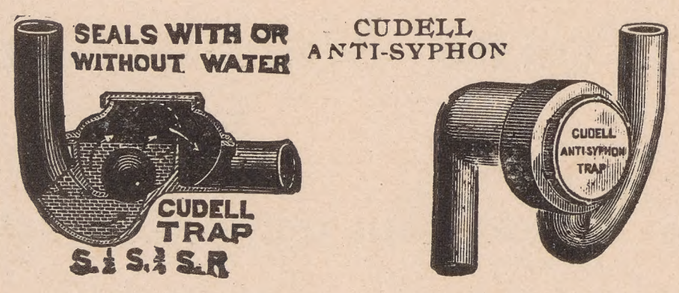

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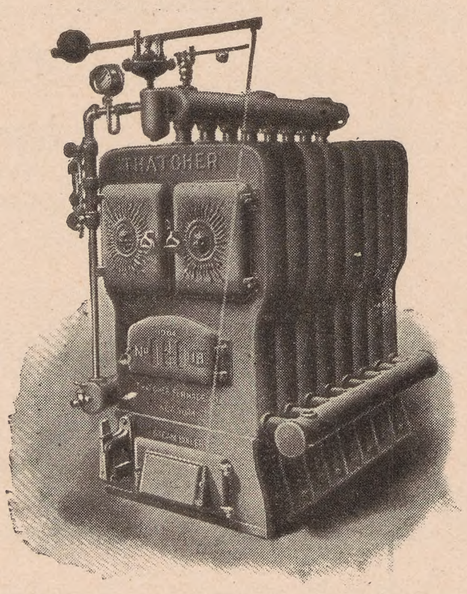

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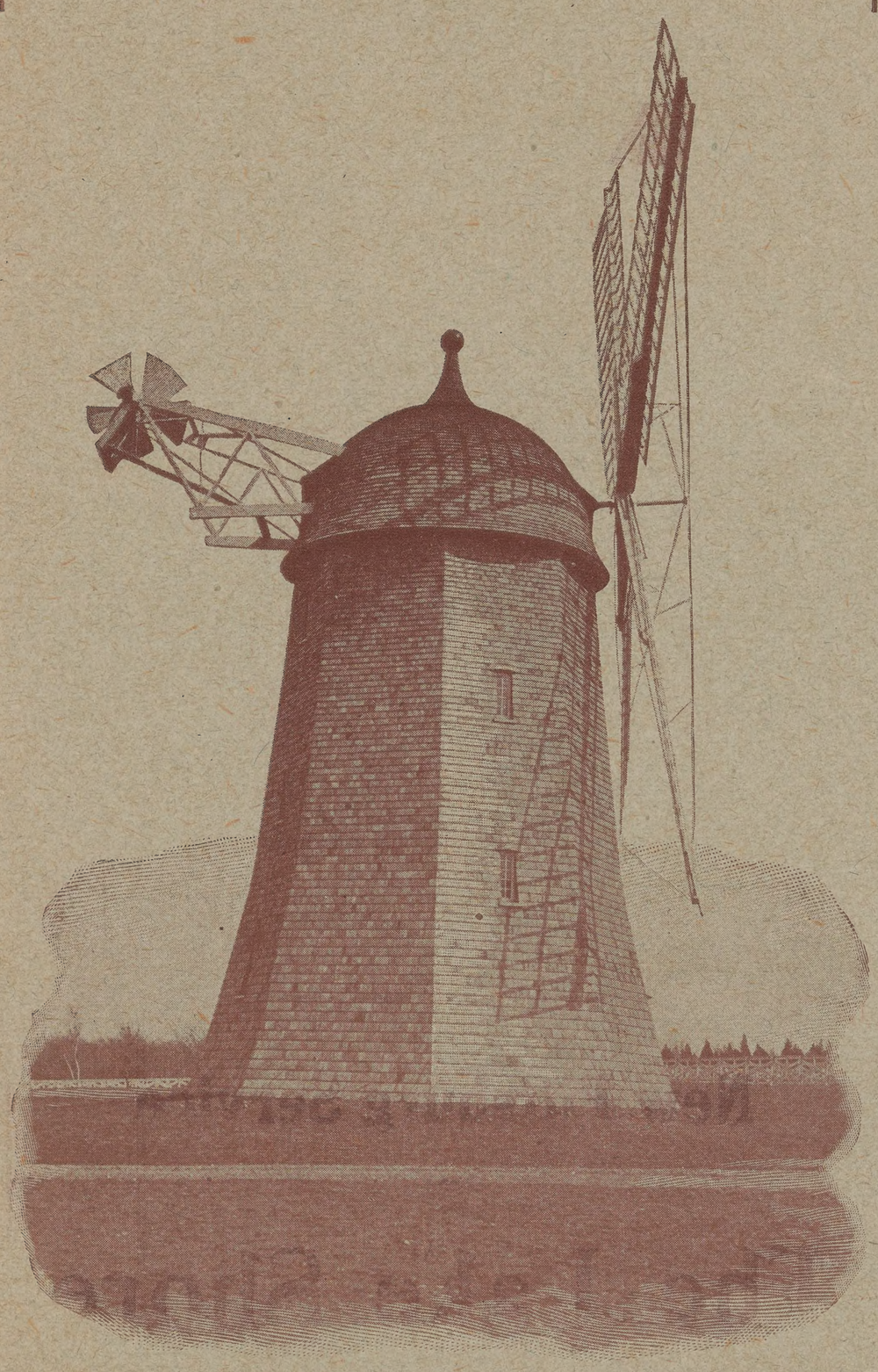

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